FCC Test Report

Product Name	Digital Camera
Model No	COOLPIX S3700
FCC ID.	CGJ4151E

Applicant	NIKON CORPORATION
Address	6-3, Nishiohi 1-chome, Shinagawa-ku, Tokyo 140-8601, Japan

Date of Receipt	Oct. 09, 2014
Issue Date	Dec. 24, 2014
Report No.	14A0223R-RFUSP26V00
Report Version	V1.0

Testing Laboratory
3023

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
This report must not be used to claim product endorsement by TAF or any agency of the government.
The test report shall not be reproduced without the written approval of QuieTek Corporation.

Test Report

Issue Date: Dec. 24, 2014
Report No.: 14A0223R-RFUSP26V00

QuieTek

Product Name	Digital Camera
Applicant	NIKON CORPORATION
Address	6-3, Nishiohi 1-chome, Shinagawa-ku, Tokyo 140-8601, Japan
Manufacturer	NIKON CORPORATION
Model No.	COOLPIX S3700
FCC ID.	CGJ4151E
EUT Rated Voltage	DC 3.7V (Power by Battery)
EUT Test Voltage	DC 3.7V (Power by Battery)
Trade Name	Nikon
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2013 ANSI C63.10: 2009, KDB 558074 D01 DTS Meas Guidance v03r02
Test Result	Complied

Documented By : Joanne Lin

(Senior Adm. Specialist / Joanne Lin)

Tested By : Jerry Tsai

(Engineer / Jerry Tsai)

Approved By :

(Director / Vincent Lin)

TABLE OF CONTENTS

	Description	Page
1.	**GENERAL INFORMATION**	**5**
1.1.	EUT Description	5
1.2.	Operational Description	7
1.3.	Tested System Details	8
1.4.	Configuration of Tested System	8
1.5.	EUT Exercise Software	8
1.6.	Test Facility	9
2.	**Conducted Emission**	**10**
2.1.	Test Equipment	10
2.2.	Test Setup	10
2.3.	Limits	11
2.4.	Test Procedure	11
2.5.	Uncertainty	11
2.6.	Test Result of Conducted Emission	12
3.	**Peak Power Output**	**15**
3.1.	Test Equipment	16
3.2.	Test Setup	16
3.3.	Limits	16
3.4.	Test Procedure	16
3.5.	Uncertainty	16
3.6.	Test Result of Peak Power Output	17
4.	**Radiated Emission**	**19**
4.1.	Test Equipment	20
4.2.	Test Setup	21
4.3.	Limits	22
4.4.	Test Procedure	23
4.5.	Uncertainty	23
4.6.	Test Result of Radiated Emission	24
5.	**RF antenna conducted test**	**36**
5.1.	Test Equipment	37
5.2.	Test Setup	37
5.3.	Limits	37
5.4.	Test Procedure	37
5.5.	Uncertainty	37
5.6.	Test Result of RF antenna conducted test	39
6.	**Band Edge**	**42**
6.1.	Test Equipment	42
6.2.	Test Setup	42
6.3.	Limits	43
6.4.	Test Procedure	44
6.5.	Uncertainty	44
6.6.	Test Result of Band Edge	44

7. Occupied Bandwidth 57

7.1. Test Equipment 57
7.2. Test Setup 57
7.3. Limits 57
7.4. Test Procedure 57
7.5. Uncertainty 57
7.6. Test Result of Occupied Bandwidth 58

8. Power Density 67

8.1. Test Equipment 67
8.2. Test Setup 67
8.3. Limits 67
8.4. Test Procedure 67
8.5. Uncertainty 67
8.6. Test Result of Power Density 68

9. EMI Reduction Method During Compliance Testing 77

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Digital Camera
Trade Name	Nikon
Model No.	COOLPIX S3700
FCC ID.	CGJ4151E
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW
Number of Channels	802.11b/g/n-20MHz: 11
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 72.2Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna type	Chip Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
AV Cable	Non-Shielded, 1.5m, with one ferrite core bonded.
USB Cable	Shielded, 0.6m, with one ferrite core bonded.
Charger	MFR: Nikon, M/N: EH-70P Input: AC 100-240V, 50/60Hz, 0.07A~0.044A Output: DC 5V, 0.55A
Battery	Nikon, EN-EL19, 3.7V, 700mAh, 2.6Wh

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Yageo	CAN4311781 04 2453K	Chip Antenna	-3.10dBi for 2.4 GHz

Note: The antenna of EUT is conform to FCC 15.203.

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

Note:

1. The EUT is an Digital Camera with a built-in 2.4GHz WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps 、802.11g is 6Mbps、802.11n(20M-BW) is 7.2Mbps.
4. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
	Mode 4: Charge Mode

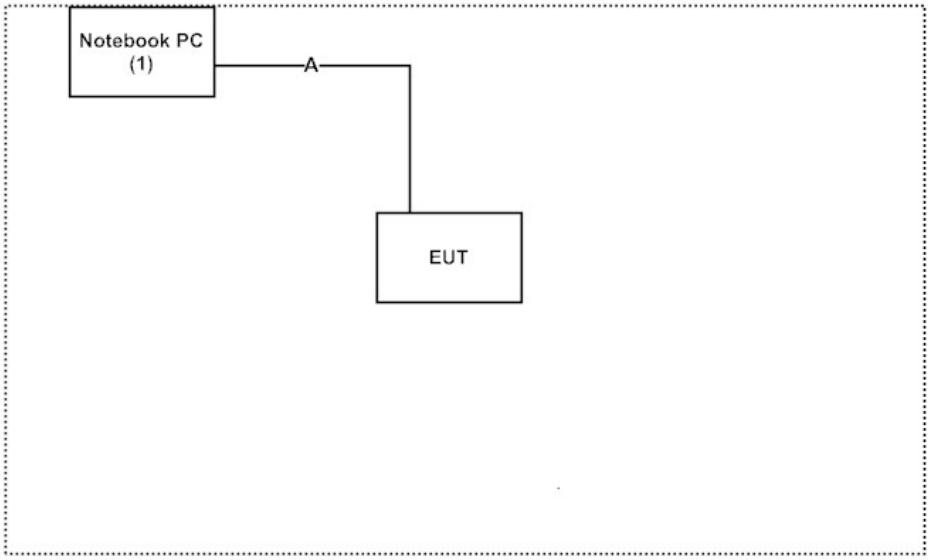
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m

Signal Cable Type		Signal cable Description
A	USB Cable	Shielded, 0.6m, with one ferrite core bonded.

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4

(2) Execute software “ChipTest v3.2.0.0” on the EUT.

(3) Configure the test mode, the test channel, and the data rate.

(4) Press “OK” to start the continuous Transmit.

(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site: http://www.quietek.com/tw/ctg/cts/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site: http://www.quietek.com/

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Site Name: Quietek Corporation
Site Address: No.5-22, Ruishukeng,
Linkou Dist. New Taipei City 24451,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

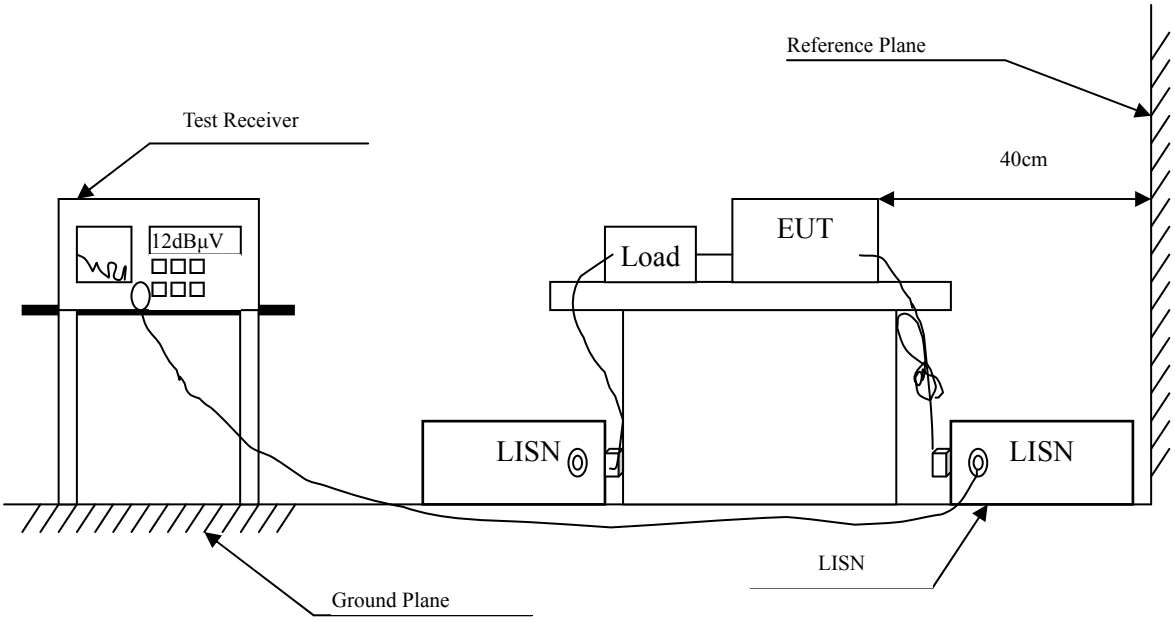
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2014	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2014	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2014	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar., 2014	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2014	
	No.1 Shielded Room				

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBμV) Limit		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2009 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Digital Camera
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV	dB	dBμV
Line 1					
Quasi-Peak					
0.216	9.651	34.550	44.201	-19.913	64.114
0.287	9.655	28.630	38.285	-23.801	62.086
0.357	9.659	30.320	39.979	-20.107	60.086
0.498	9.667	25.560	35.227	-20.830	56.057
5.556	9.876	24.540	34.416	-25.584	60.000
14.463	10.071	22.570	32.641	-27.359	60.000
Average					
0.216	9.651	32.560	42.211	-11.903	54.114
0.287	9.655	24.640	34.295	-17.791	52.086
0.357	9.659	24.740	34.399	-15.687	50.086
0.498	9.667	23.890	33.557	-12.500	46.057
5.556	9.876	13.200	23.076	-26.924	50.000
14.463	10.071	15.980	26.051	-23.949	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Digital Camera
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV	dB	dBμV
Line 2					
Quasi-Peak					
0.216	9.661	32.460	42.121	-21.993	64.114
0.283	9.664	25.740	35.404	-26.796	62.200
0.357	9.659	27.620	37.279	-22.807	60.086
0.576	9.671	15.420	25.091	-30.909	56.000
5.201	9.871	18.560	28.431	-31.569	60.000
14.318	10.090	21.740	31.830	-28.170	60.000
Average					
0.216	9.661	26.120	35.781	-18.333	54.114
0.283	9.664	23.140	32.804	-19.396	52.200
0.357	9.659	23.800	33.459	-16.627	50.086
0.576	9.671	9.740	19.411	-26.589	46.000
5.201	9.871	11.290	21.161	-28.839	50.000
14.318	10.090	20.000	30.090	-19.910	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Digital Camera
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 4: Charge Mode

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
Line 2					
Quasi-Peak					
0.189	9.650	38.270	47.920	-16.966	64.886
0.287	9.655	34.610	44.265	-17.821	62.086
0.658	9.675	34.130	43.805	-12.195	56.000
1.380	9.725	33.400	43.125	-12.875	56.000
2.150	9.777	33.180	42.957	-13.043	56.000
7.197	9.918	30.370	40.288	-19.712	60.000
Average					
0.189	9.650	30.570	40.220	-14.666	54.886
0.287	9.655	26.600	36.255	-15.831	52.086
0.658	9.675	27.420	37.095	-8.905	46.000
1.380	9.725	25.910	35.635	-10.365	46.000
2.150	9.777	22.900	32.677	-13.323	46.000
7.197	9.918	25.370	35.288	-14.712	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Digital Camera
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 4: Charge Mode

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV	dB	dBμV
Line 2					
Quasi-Peak					
0.189	9.660	35.400	45.060	-19.826	64.886
0.201	9.660	33.390	43.050	-21.493	64.543
0.291	9.661	30.590	40.251	-21.720	61.971
0.412	9.662	30.860	40.522	-17.992	58.514
1.056	9.707	28.920	38.627	-17.373	56.000
7.447	9.931	26.400	36.331	-23.669	60.000
Average					
0.189	9.660	18.340	28.000	-26.886	54.886
0.201	9.660	23.720	33.380	-21.163	54.543
0.291	9.661	25.000	34.661	-17.310	51.971
0.412	9.662	25.370	35.032	-13.482	48.514
1.056	9.707	20.040	29.747	-16.253	46.000
7.447	9.931	21.790	31.721	-18.279	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2014
X	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup

3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 D01 DTS Meas Guidance v03r02 section 9.1.2 PKPM1 Peak power meter method.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Digital Camera
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	14.84	--	--	--	17.97	<30dBm	Pass
06	2437	14.67	14.55	14.41	14.32	17.91	<30dBm	Pass
11	2462	14.33	--	--	--	17.48	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : Digital Camera
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	14.79	--	--	--	--	--	--	--	25.27	<30dBm	Pass
06	2437	14.51	14.4	14.29	14.15	14.01	13.91	13.81	13.74	24.91	<30dBm	Pass
11	2462	14.26	--	--	--	--	--	--	--	24.56	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : Digital Camera
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2	7.2		
		Measurement Level (dBm)										
01	2412	14.31	--	--	--	--	--	--	--	25.04	<30dBm	Pass
06	2437	13.92	13.81	13.72	13.58	13.44	13.34	13.21	13.1	24.14	<30dBm	Pass
11	2462	13.74	--	--	--	--	--	--	--	24.2	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

4. Radiated Emission

4.1. Test Equipment

The following test equipment are used during the radiated emission test:

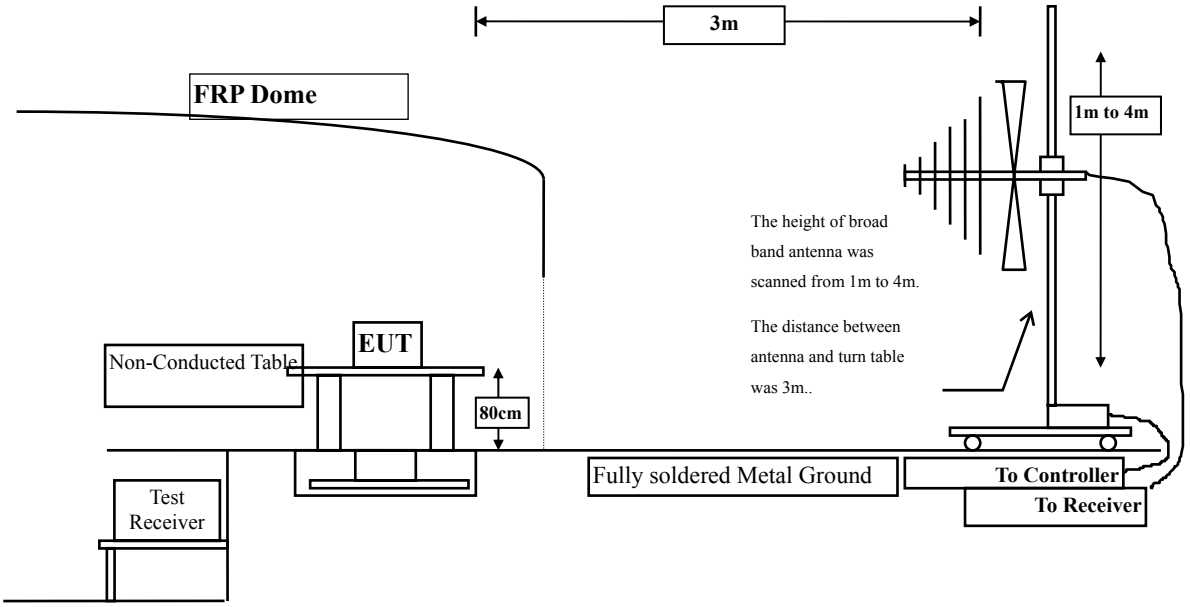
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2014
	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2014
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

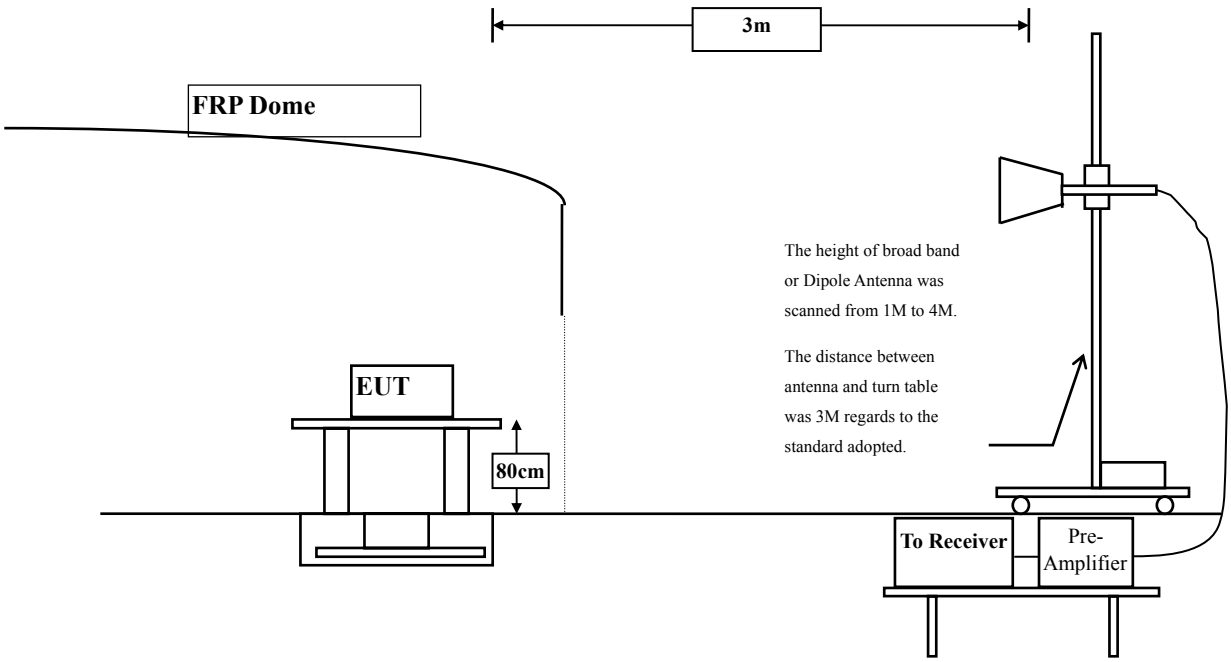
2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dBμV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2009 on radiated measurement.
The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.
Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.
The measurement is divided into the Preliminary Measurement and the Final Measurement.
The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.
The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.
The frequency range from 9kHz to 10th harmonics is checked.

4.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Digital Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4824.000	2.428	40.953	43.382	-30.618	74.000
7236.000	9.177	38.693	47.870	-26.130	74.000
9648.000	10.019	38.283	48.303	-25.697	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	2.836	40.427	43.264	-30.736	74.000
7236.000	9.676	37.448	47.124	-26.876	74.000
9648.000	10.556	38.445	49.002	-24.998	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Digital Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4874.000	2.076	40.624	42.701	-31.299	74.000
7311.000	9.512	37.871	47.383	-26.617	74.000
9748.000	9.630	38.637	48.267	-25.733	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	2.532	40.924	43.456	-30.544	74.000
7311.000	10.089	38.428	48.517	-25.483	74.000
9748.000	10.266	39.154	49.421	-24.579	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Digital Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4924.000	2.191	40.128	42.319	-31.681	74.000
7386.000	10.373	38.319	48.693	-25.307	74.000
9848.000	9.964	38.781	48.745	-25.255	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	2.805	39.872	42.677	-31.323	74.000
7386.000	11.180	38.281	49.461	-24.539	74.000
9848.000	10.801	37.676	48.477	-25.523	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Digital Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4824.000	2.428	40.524	42.953	-31.047	74.000
7236.000	9.177	38.319	47.496	-26.504	74.000
9648.000	10.019	39.421	49.441	-24.559	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	2.836	40.564	43.401	-30.599	74.000
7236.000	9.676	38.809	48.485	-25.515	74.000
9648.000	10.556	38.045	48.602	-25.398	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Digital Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4874.000	2.076	40.337	42.414	-31.586	74.000
7311.000	9.512	38.675	48.187	-25.813	74.000
9748.000	9.630	38.907	48.537	-25.463	74.000
Average Detector:					
--					
Peak Detector:					
4874.000	2.532	40.197	42.729	-31.271	74.000
7311.000	10.089	38.837	48.926	-25.074	74.000
9748.000	10.266	38.355	48.622	-25.378	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Digital Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4924.000	2.191	39.916	42.107	-31.893	74.000
7386.000	10.373	37.807	48.181	-25.819	74.000
9848.000	9.964	38.625	48.589	-25.411	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	2.805	40.182	42.987	-31.013	74.000
7386.000	11.180	38.010	49.190	-24.810	74.000
9848.000	10.801	37.852	48.653	-25.347	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Digital Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4824.000	2.428	39.881	42.310	-31.690	74.000
7236.000	9.177	38.062	47.239	-26.761	74.000
9648.000	10.019	37.161	47.181	-26.819	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	2.836	40.543	43.380	-30.620	74.000
7236.000	9.676	38.391	48.067	-25.933	74.000
9648.000	10.556	37.382	47.939	-26.061	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Digital Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4874.000	2.076	40.392	42.469	-31.531	74.000
7311.000	9.512	38.728	48.240	-25.760	74.000
9748.000	9.630	38.024	47.654	-26.346	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	2.532	40.218	42.750	-31.250	74.000
7311.000	10.089	38.816	48.905	-25.095	74.000
9748.000	10.266	38.322	48.589	-25.411	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Digital Camera
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4924.000	2.191	40.879	43.070	-30.930	74.000
7386.000	10.373	37.998	48.372	-25.628	74.000
9848.000	9.964	37.556	47.520	-26.480	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	2.805	40.218	43.023	-30.977	74.000
7386.000	11.180	38.482	49.662	-24.338	74.000
9848.000	10.801	37.518	48.319	-25.681	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Digital Camera
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
107.600	-7.058	24.304	17.246	-26.254	43.500
350.100	-2.332	22.994	20.662	-25.338	46.000
460.680	1.589	22.232	23.821	-22.179	46.000
610.060	4.101	24.180	28.281	-17.719	46.000
689.600	3.628	23.910	27.538	-18.462	46.000
996.120	7.669	22.769	30.438	-23.562	54.000
Vertical					
107.600	-0.318	24.433	24.115	-19.385	43.500
365.620	-2.179	23.083	20.904	-25.096	46.000
540.220	0.121	23.872	23.993	-22.007	46.000
689.600	2.538	23.443	25.981	-20.019	46.000
804.060	3.587	21.927	25.514	-20.486	46.000
968.960	8.191	21.788	29.979	-24.021	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Digital Camera
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
95.960	-7.820	25.809	17.989	-25.511	43.500
241.460	-6.531	23.913	17.382	-28.618	46.000
429.640	-2.242	24.021	21.779	-24.221	46.000
600.360	3.977	24.569	28.546	-17.454	46.000
722.580	3.496	23.912	27.408	-18.592	46.000
858.380	5.972	21.877	27.849	-18.151	46.000
Vertical					
103.720	-0.151	24.051	23.899	-19.601	43.500
383.080	-2.184	23.076	20.892	-25.108	46.000
540.220	0.121	23.136	23.257	-22.743	46.000
695.420	1.878	23.840	25.718	-20.282	46.000
844.800	3.181	21.304	24.485	-21.515	46.000
967.020	8.071	21.736	29.807	-24.193	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Digital Camera
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2437 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
103.720	-6.751	24.021	17.269	-26.231	43.500
253.100	-5.387	23.456	18.069	-27.931	46.000
460.680	1.589	22.504	24.093	-21.907	46.000
608.120	4.384	24.317	28.701	-17.299	46.000
879.720	6.115	22.089	28.204	-17.796	46.000
1000.000	9.119	21.714	30.833	-23.167	54.000
Vertical					
99.840	-0.021	24.659	24.638	-18.862	43.500
340.400	-3.899	23.500	19.601	-26.399	46.000
460.680	-3.221	23.093	19.872	-26.128	46.000
602.300	-2.333	24.474	22.141	-23.859	46.000
825.400	3.430	21.652	25.082	-20.918	46.000
968.960	8.191	21.218	29.409	-24.591	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Digital Camera
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Charge Mode

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
94.990	-10.435	37.990	27.556	-15.944	43.500
329.730	-4.436	24.099	19.663	-26.337	46.000
487.840	1.400	23.798	25.197	-20.803	46.000
635.280	1.798	23.003	24.801	-21.199	46.000
787.570	5.979	22.927	28.906	-17.094	46.000
950.530	7.044	22.889	29.932	-16.068	46.000
Vertical					
45.520	-10.625	43.337	32.712	-7.288	40.000
185.200	-5.401	24.536	19.135	-24.365	43.500
382.110	0.521	23.986	24.506	-21.494	46.000
611.030	2.009	24.828	26.838	-19.162	46.000
765.260	1.921	23.510	25.431	-20.569	46.000
946.650	3.270	22.561	25.831	-20.169	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.
8. No emission found between lowest internal used/generated frequency to 30MHz.

5. RF antenna conducted test

5.1. Test Equipment

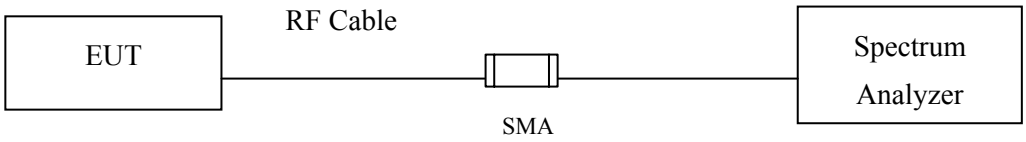
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

5.5. Uncertainty

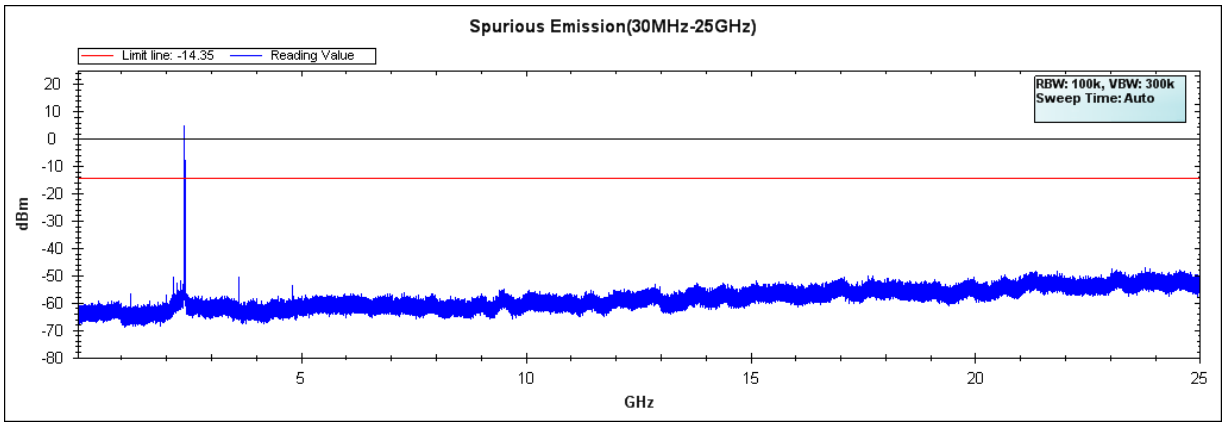
The measurement uncertainty

Conducted is defined as ± 1.27dB

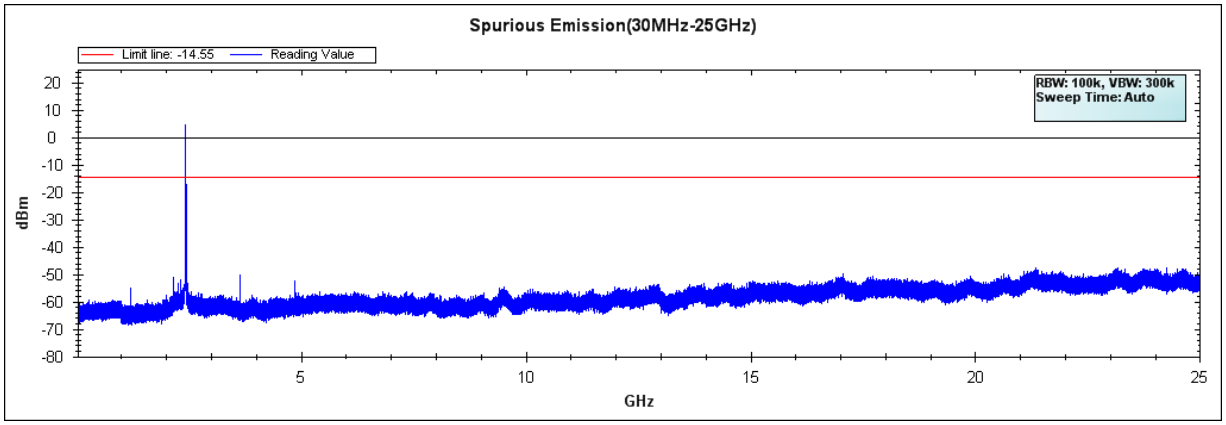
5.6. Test Result of RF antenna conducted test

Product : Digital Camera
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

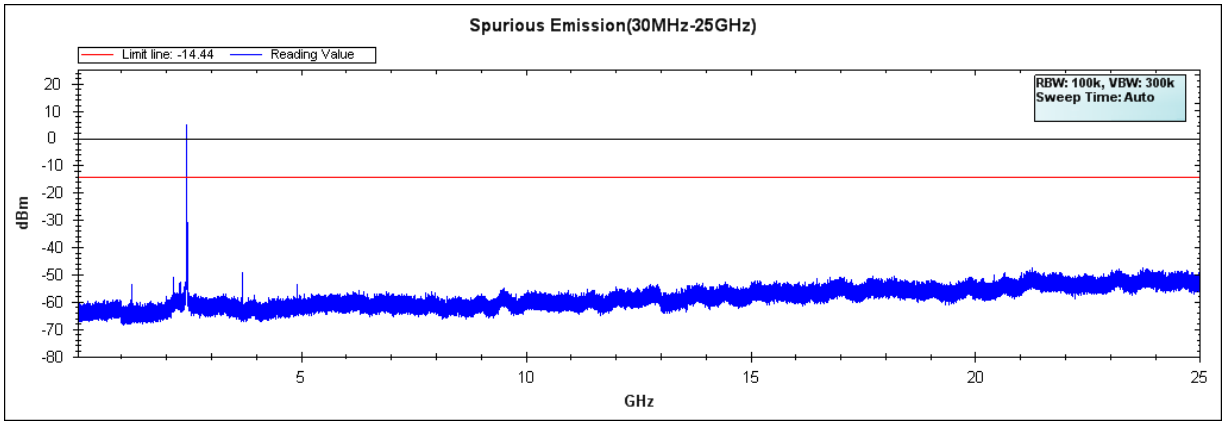
Channel 01 (2412MHz)



Channel 06 (2437MHz)

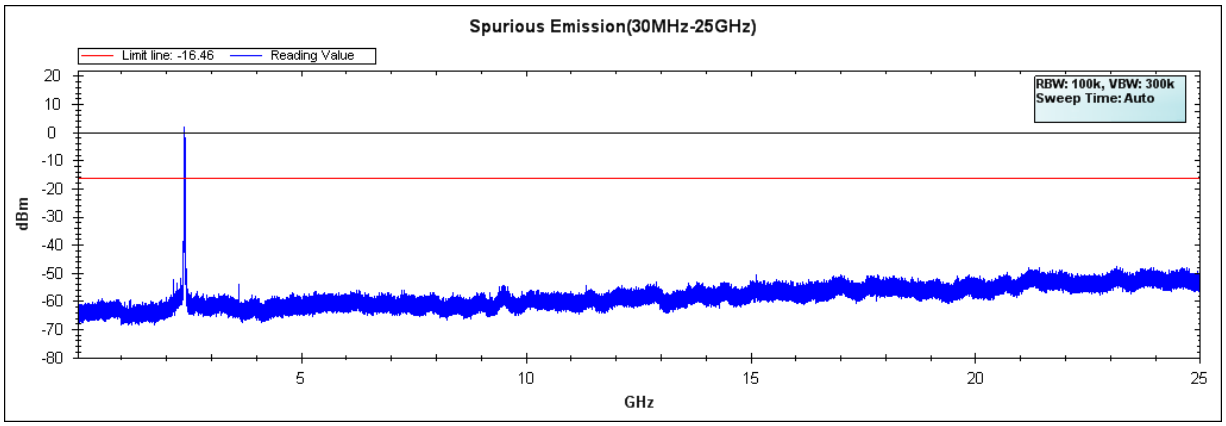


Channel 11 (2462MHz)

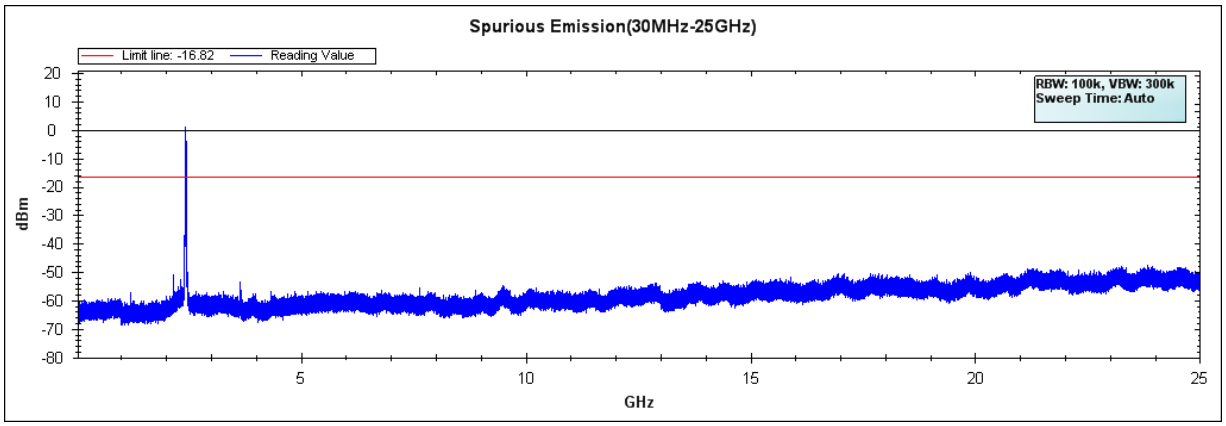


Product : Digital Camera
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

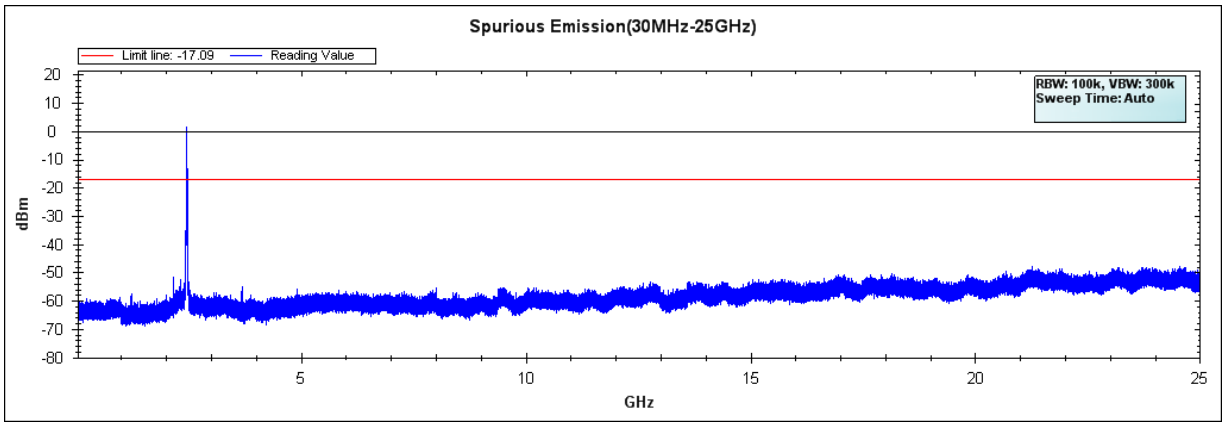
Channel 01 (2412MHz)



Channel 06 (2437MHz)

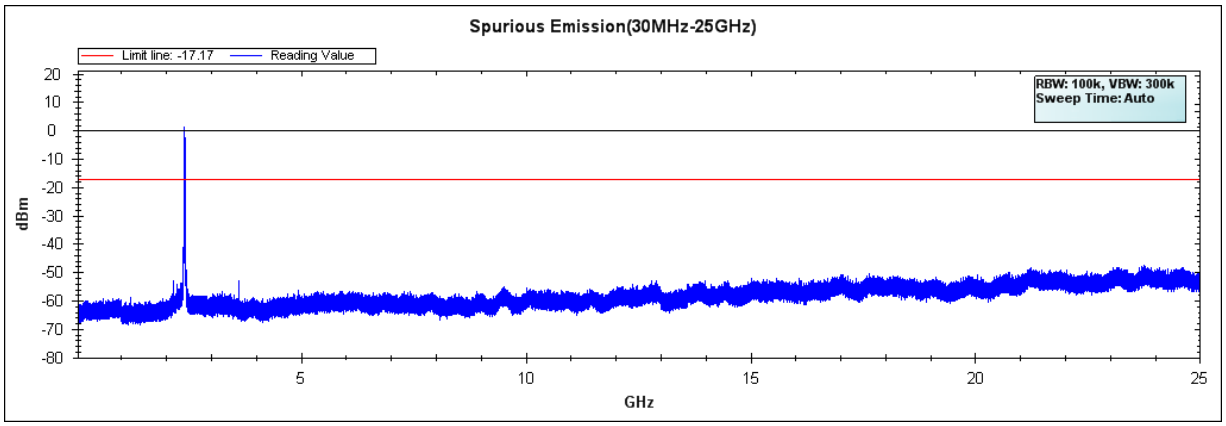


Channel 11 (2462MHz)

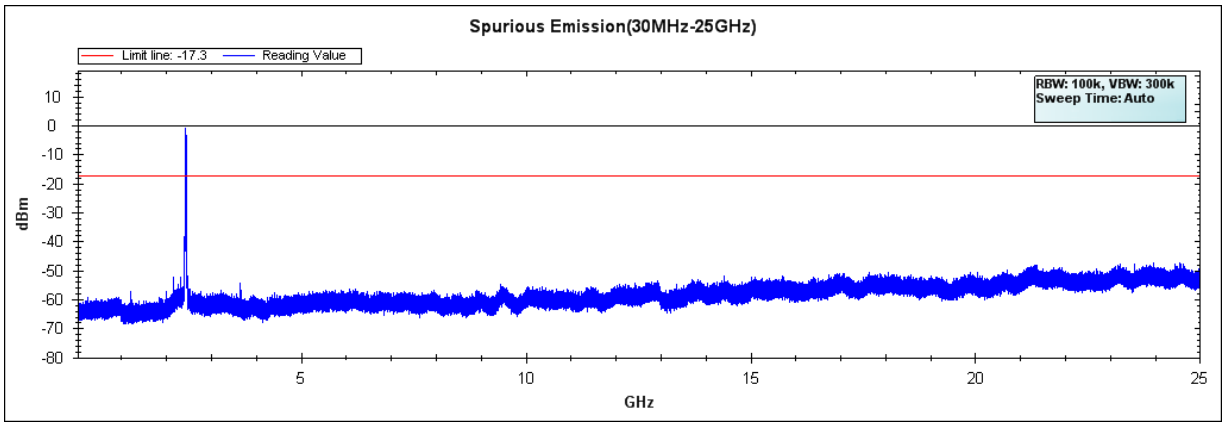


Product : Digital Camera
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

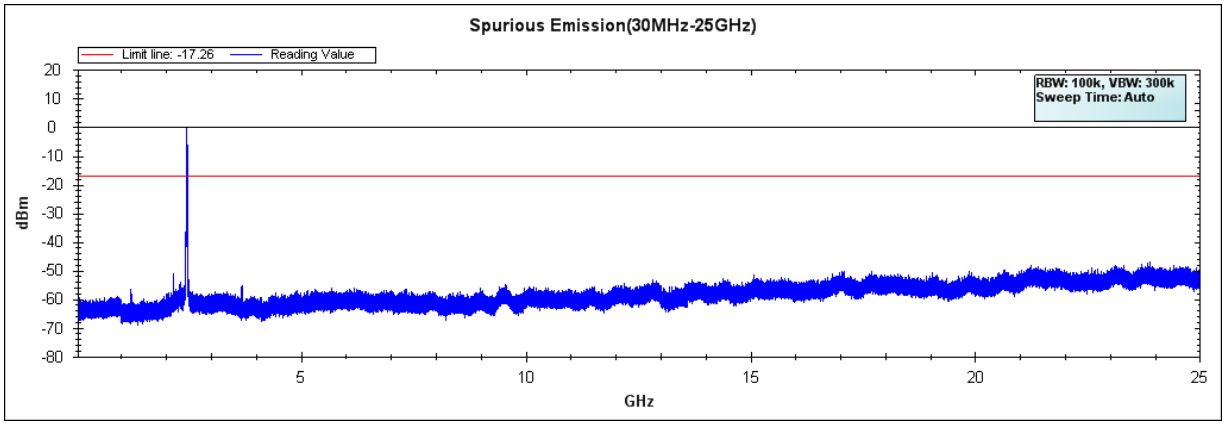
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



6. Band Edge

6.1. Test Equipment

RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

RF Radiated Measurement:

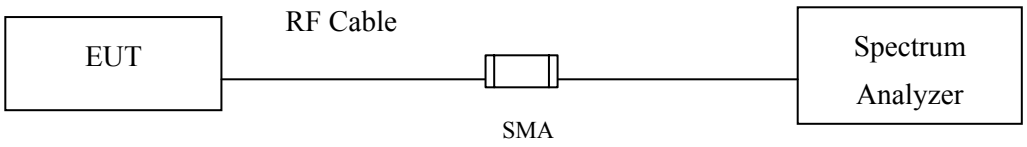
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2014
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2014
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2014
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2014
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2014
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

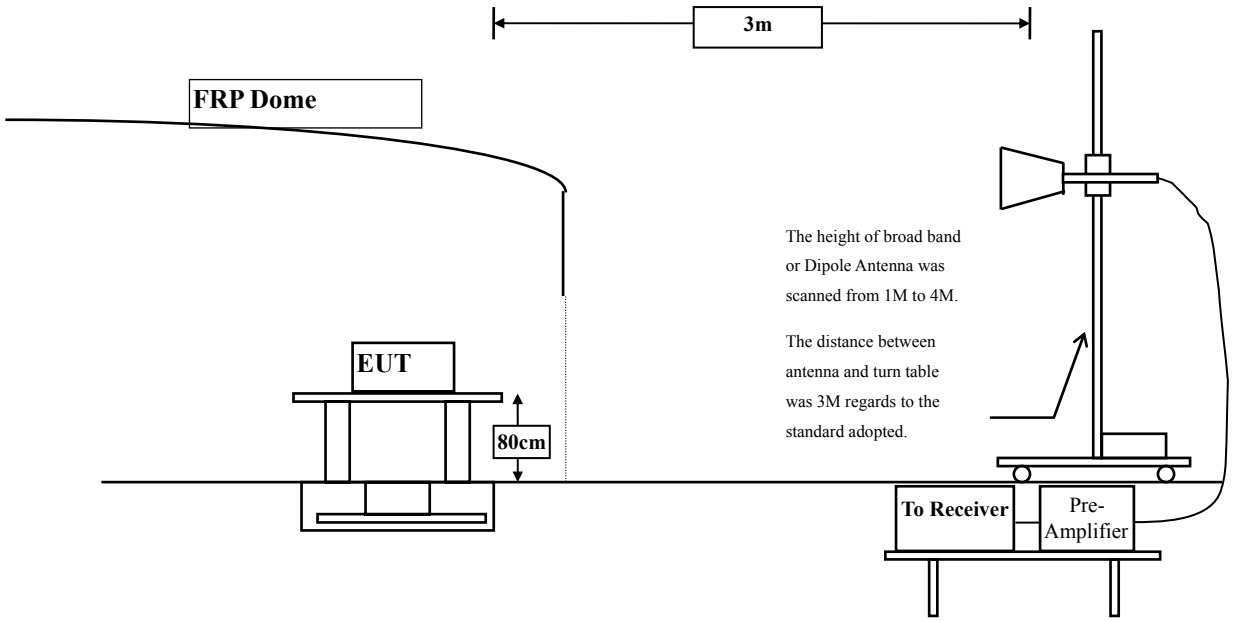
Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2009 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2387.400	31.499	26.516	58.015	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	24.833	56.342	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	24.351	55.912	--	--	--
01 (Peak)	2413.000	31.646	49.613	81.259	--	--	--
01 (Average)	2390.000	31.509	14.009	45.518	74.00	54.00	Pass
01 (Average)	2400.000	31.561	13.982	45.543	--	--	--
01 (Average)	2412.800	31.645	44.444	76.088	--	--	--

Figure Channel 01: Horizontal (Peak)

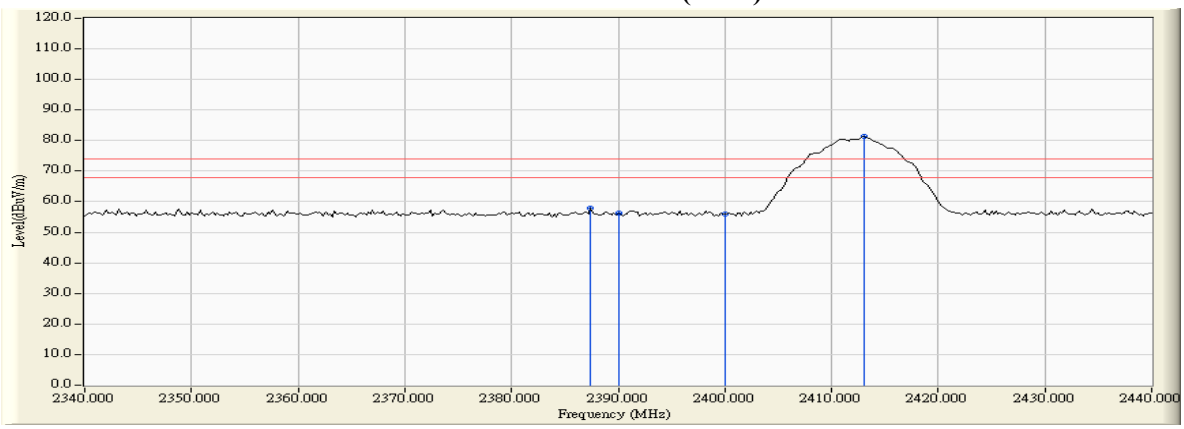
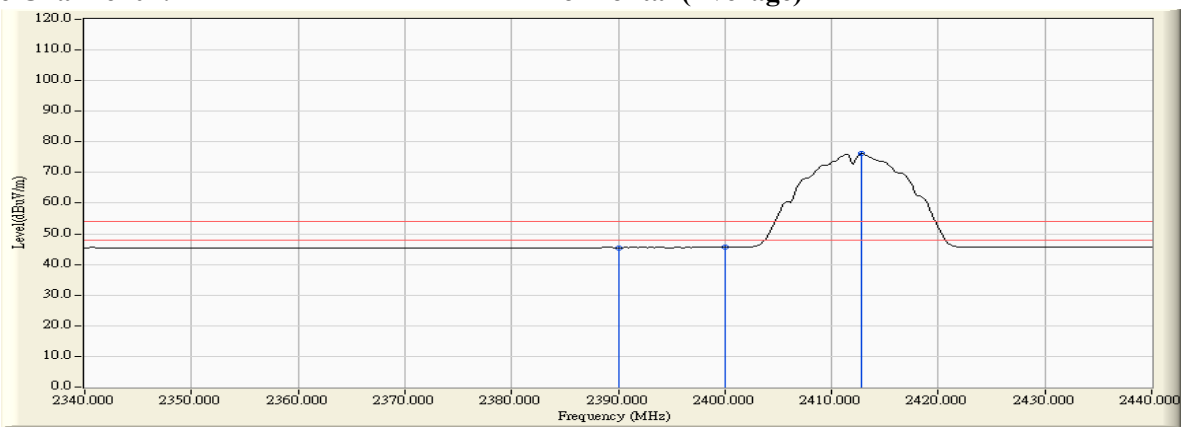


Figure Channel 01: Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2389.400	30.918	25.294	56.212	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	23.324	54.239	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	23.646	54.558	--	--	--
01 (Peak)	2413.000	30.956	52.151	83.107	--	--	--
01 (Average)	2390.000	30.915	14.394	45.309	74.00	54.00	Pass
01 (Average)	2400.000	30.912	14.036	44.948	--	--	--
01 (Average)	2412.800	30.955	49.188	80.143	--	--	--

Figure Channel 01: VERTICAL (Peak)

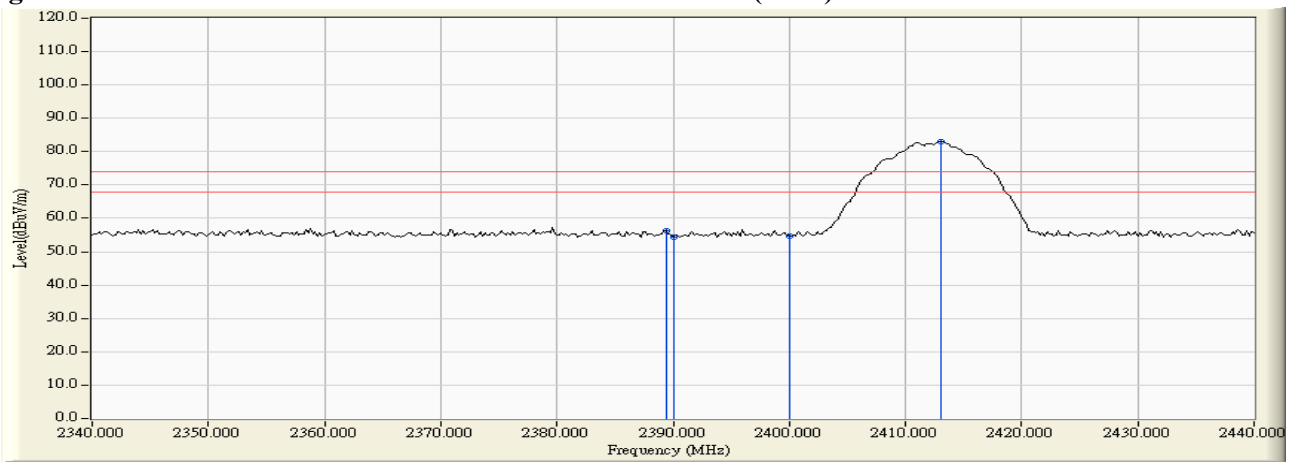
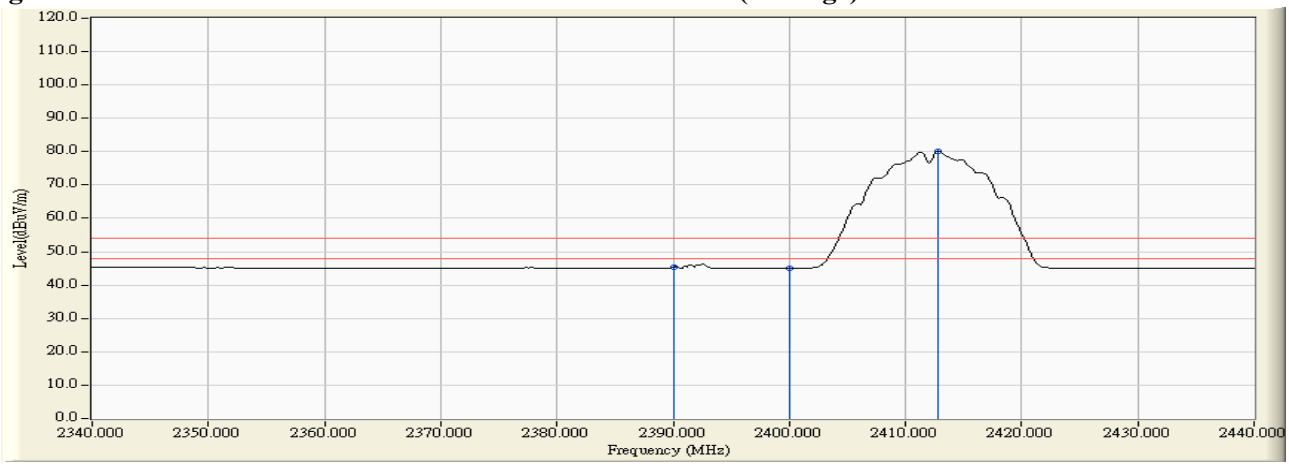


Figure Channel 01: VERTICAL (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2463.100	32.028	51.888	83.916	--	--	--
11 (Peak)	2483.500	32.182	25.625	57.807	74.00	54.00	Pass
11 (Average)	2461.300	32.014	47.797	79.811	--	--	--
11 (Average)	2483.500	32.182	14.027	46.209	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

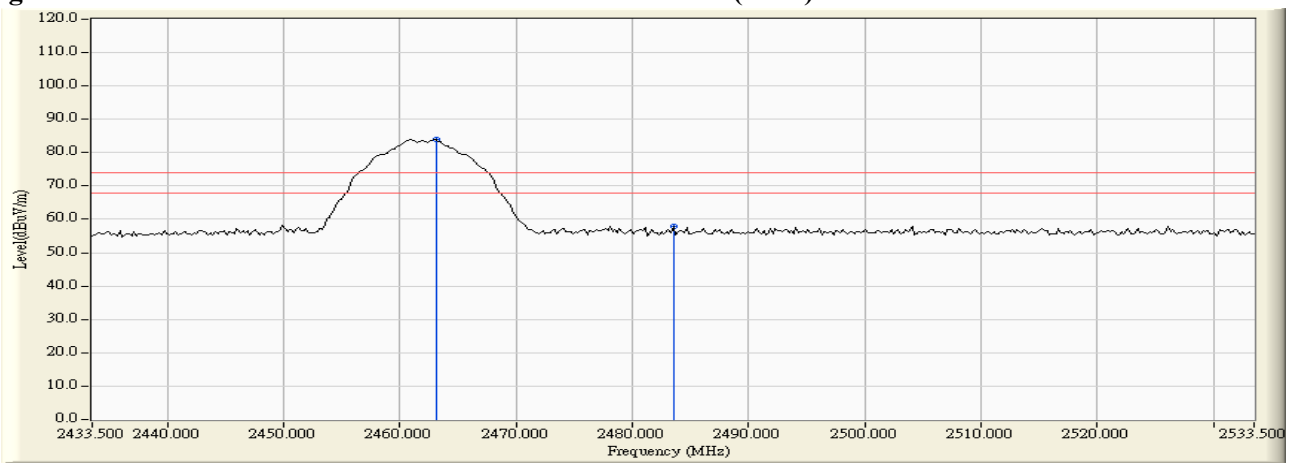
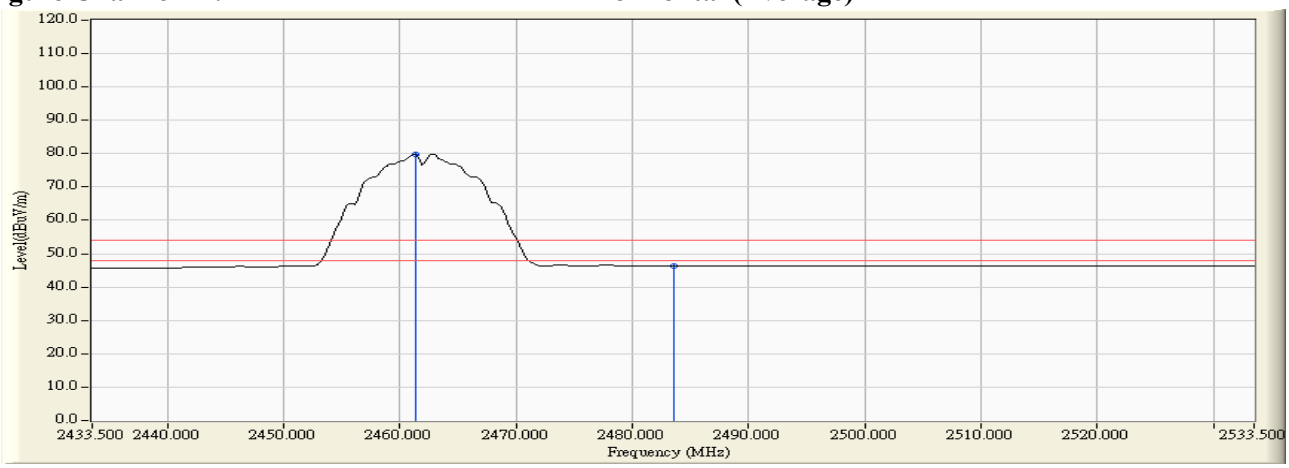


Figure Channel 11: Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2462.900	31.296	55.708	87.004	--	--	--
11 (Peak)	2483.500	31.435	24.728	56.163	74.00	54.00	Pass
11 (Peak)	2484.700	31.444	26.073	57.516	74.00	54.00	Pass
11 (Average)	2461.100	31.285	51.455	82.739	--	--	--
11 (Average)	2483.500	31.435	14.046	45.481	74.00	54.00	Pass

Figure Channel 11: VERTICAL (Peak)

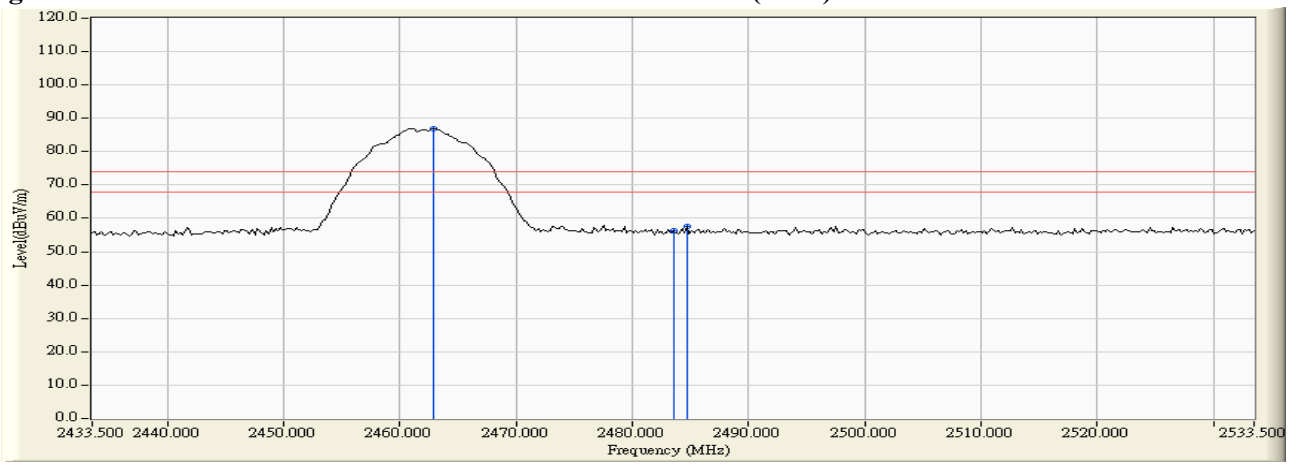
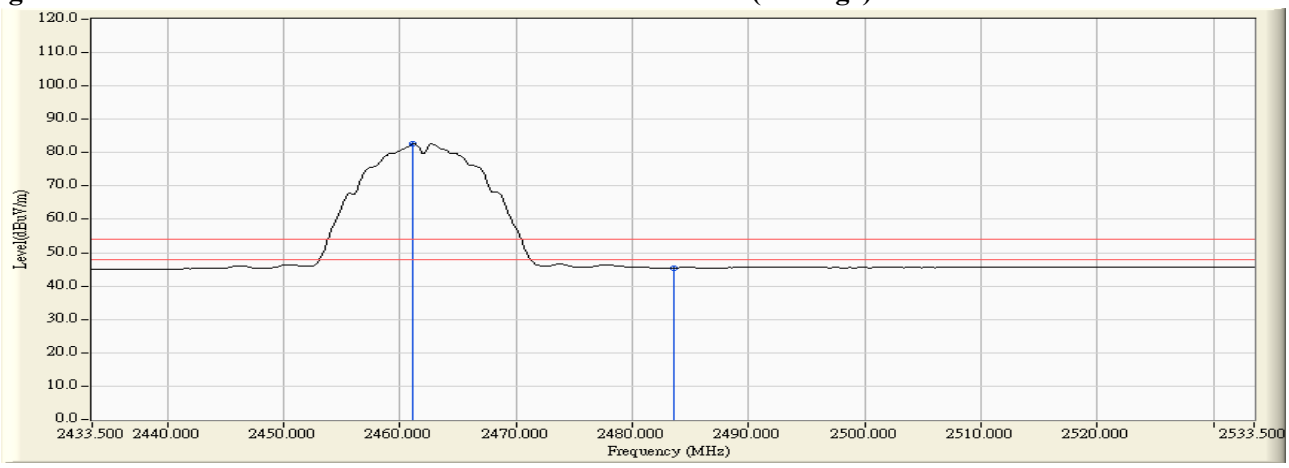


Figure Channel 11: VERTICAL (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2390.000	31.509	25.141	56.650	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	26.954	58.515	--	--	--
01 (Peak)	2412.200	31.640	55.896	87.536	--	--	--
01 (Average)	2390.000	31.509	14.077	45.586	74.00	54.00	Pass
01 (Average)	2400.000	31.561	14.550	46.111	--	--	--
01 (Average)	2413.000	31.646	41.467	73.113	--	--	--

Figure Channel 01: Horizontal (Peak)

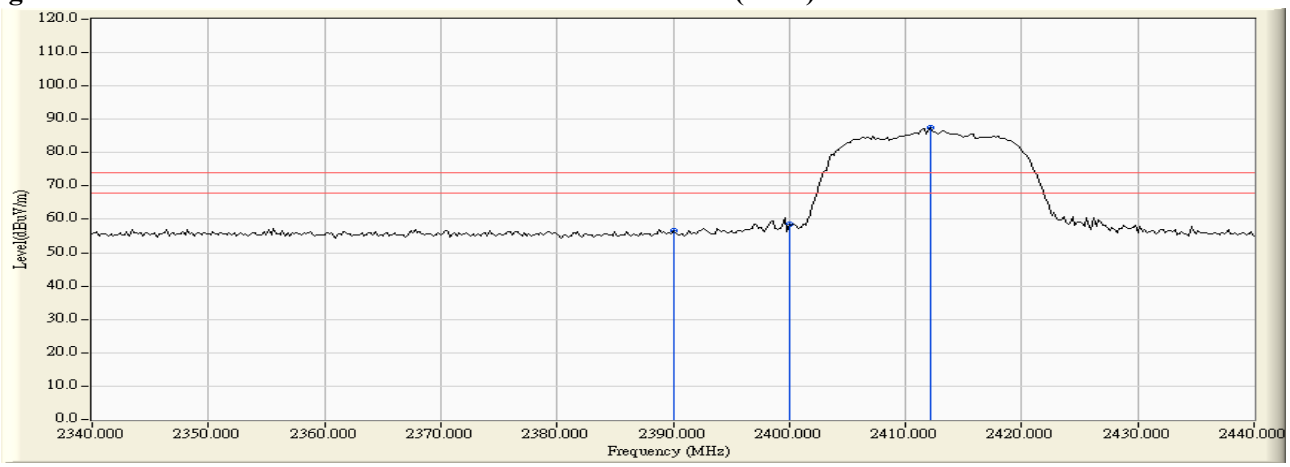
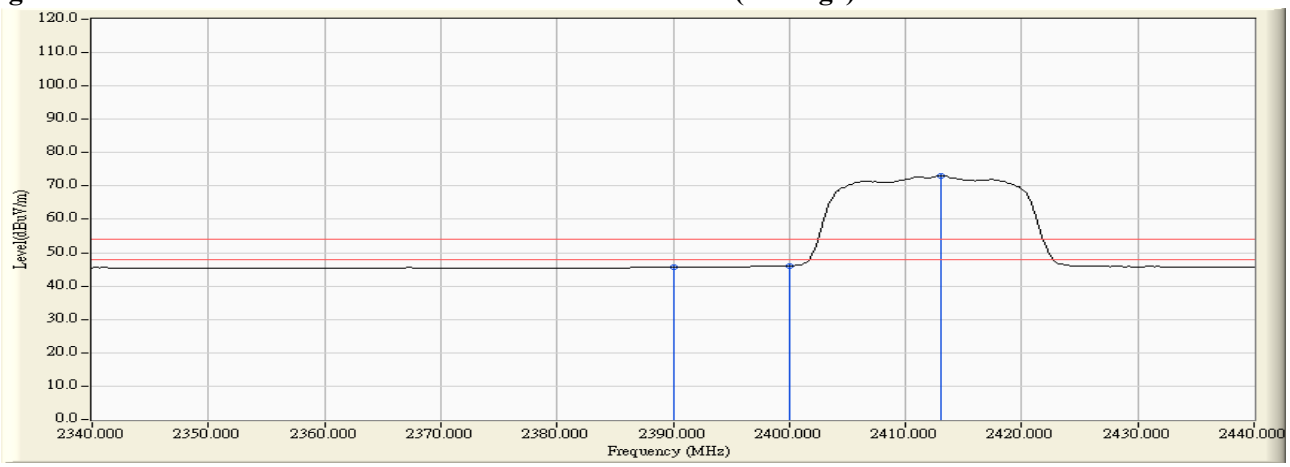


Figure Channel 01: Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2386.000	30.934	26.650	57.584	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	24.366	55.281	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	32.248	63.160	--	--	--
01 (Peak)	2413.200	30.957	60.218	91.175	--	--	--
01 (Average)	2390.000	30.915	14.135	45.050	74.00	54.00	Pass
01 (Average)	2400.000	30.912	15.221	46.133	--	--	--
01 (Average)	2413.000	30.956	45.492	76.448	--	--	--

Figure Channel 01: VERTICAL (Peak)

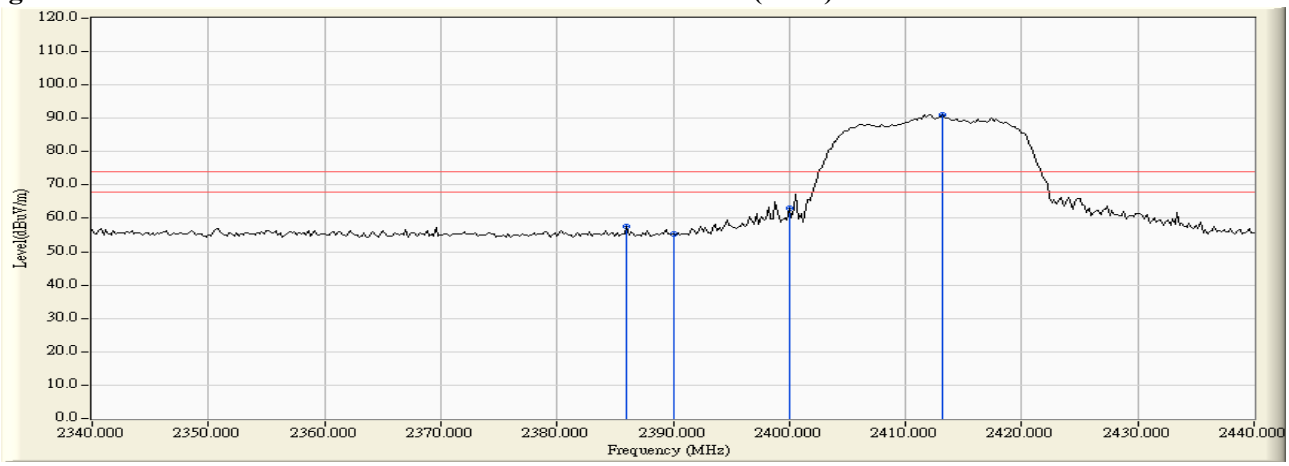
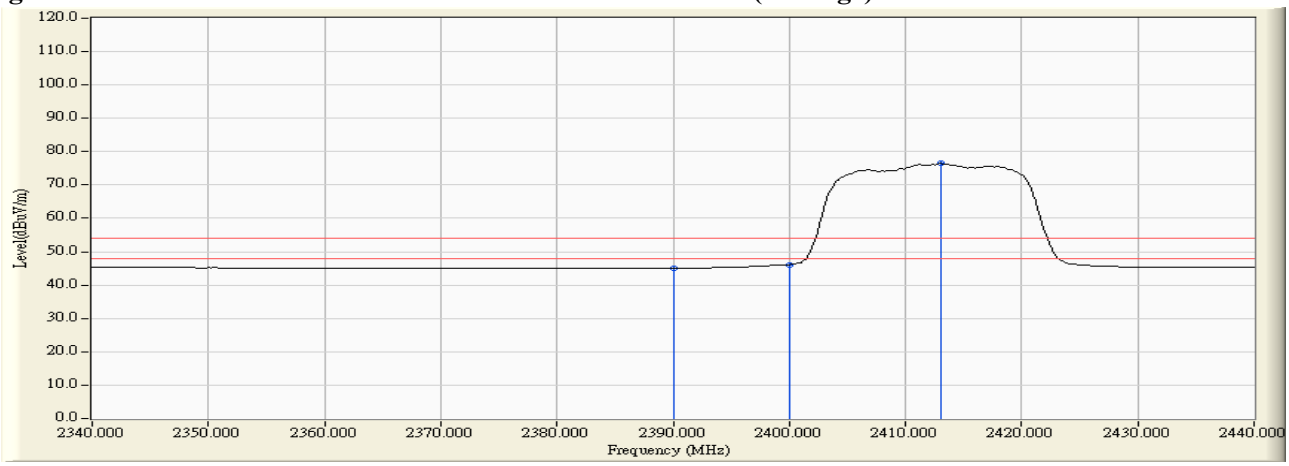


Figure Channel 01: VERTICAL (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2461.900	32.018	56.708	88.727	--	--	--
11 (Peak)	2483.500	32.182	24.439	56.621	74.00	54.00	Pass
11 (Peak)	2483.900	32.185	26.294	58.479	74.00	54.00	Pass
11 (Average)	2461.100	32.013	42.222	74.235	--	--	--
11 (Average)	2483.500	32.182	14.169	46.351	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

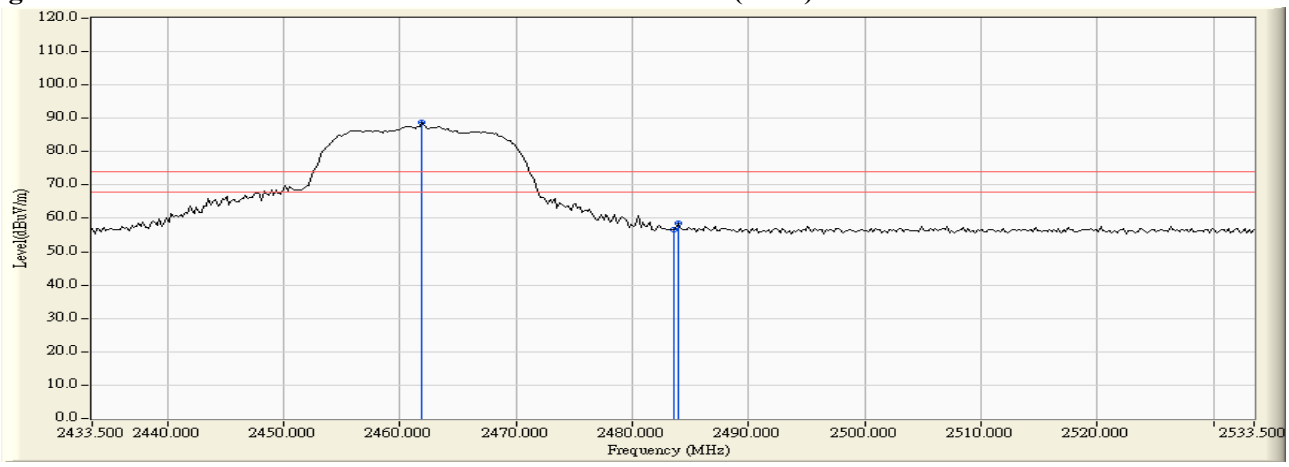
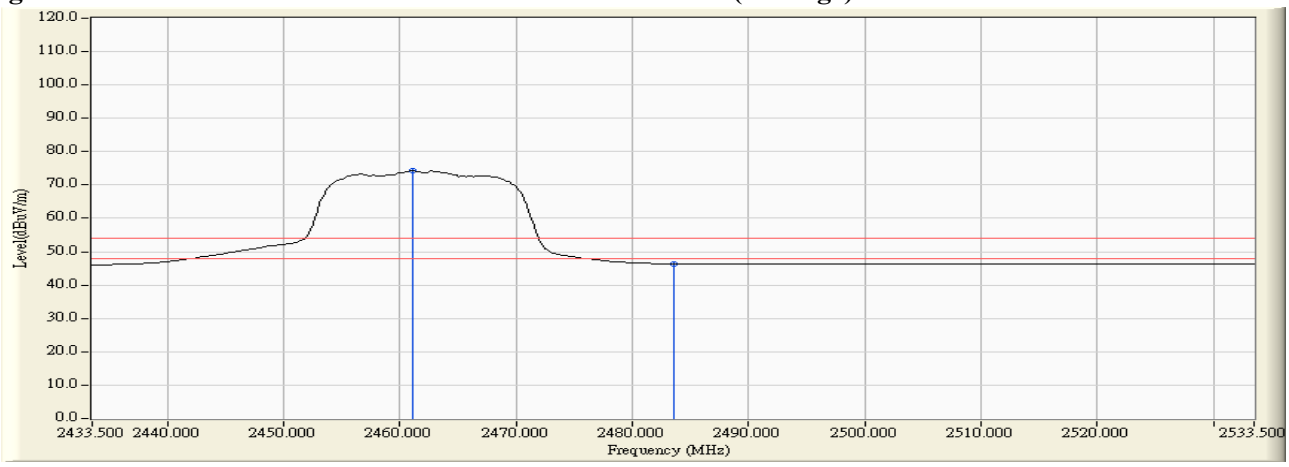


Figure Channel 11: Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2461.700	31.288	60.969	92.257	--	--	--
11 (Peak)	2483.500	31.435	26.082	57.517	74.00	54.00	Pass
11 (Average)	2462.900	31.296	45.356	76.652	--	--	--
11 (Average)	2483.500	31.435	14.442	45.877	74.00	54.00	Pass

Figure Channel 11: VERTICAL (Peak)

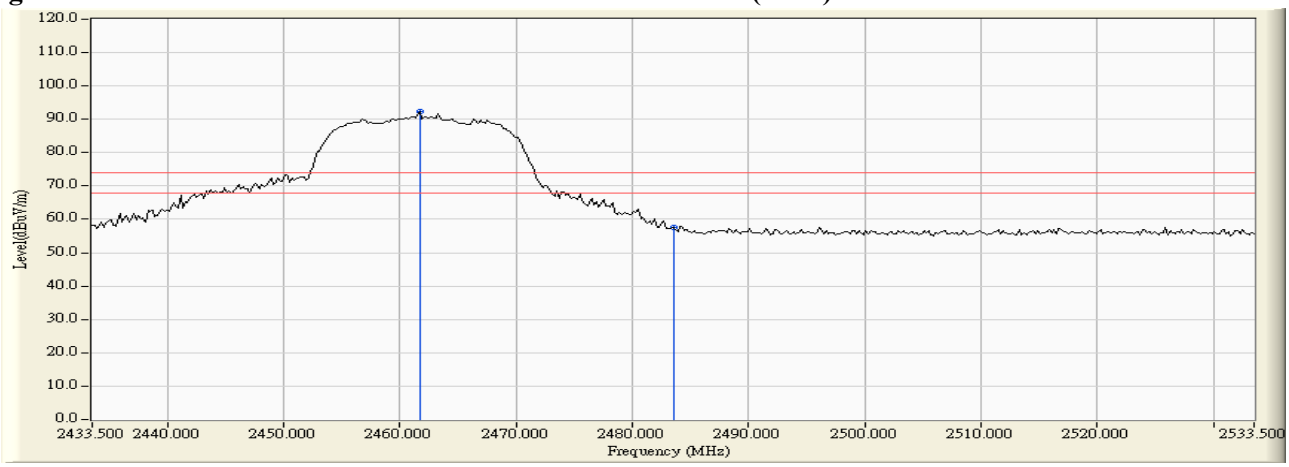
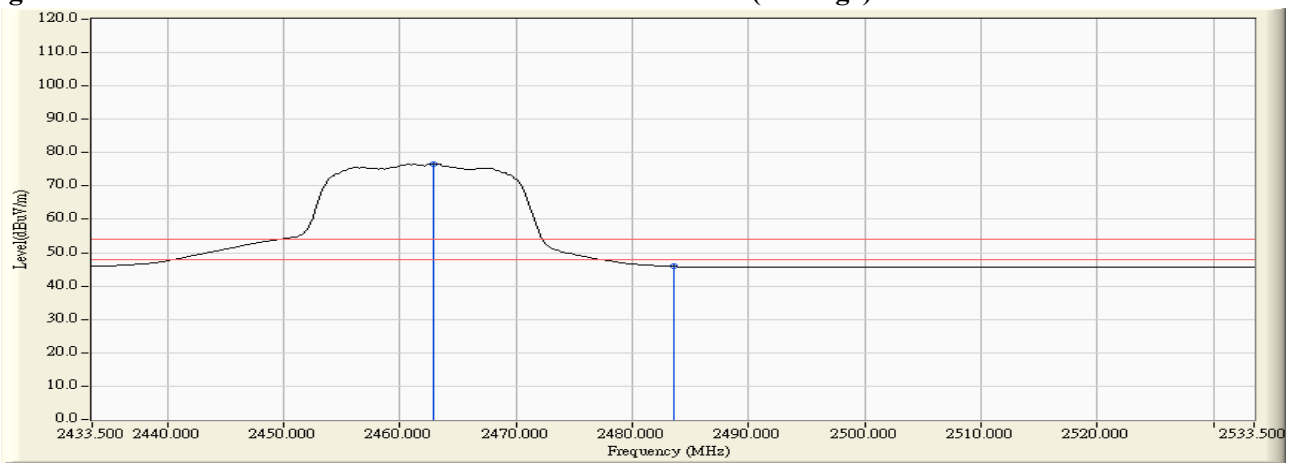


Figure Channel 11: VERTICAL (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2390.000	31.509	25.443	56.952	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	30.093	61.654	--	--	--
01 (Peak)	2412.600	31.642	56.364	88.007	--	--	--
01 (Average)	2390.000	31.509	14.109	45.618	74.00	54.00	Pass
01 (Average)	2400.000	31.561	14.453	46.014	--	--	--
01 (Average)	2413.000	31.646	41.567	73.213	--	--	--

Figure Channel 01: Horizontal (Peak)

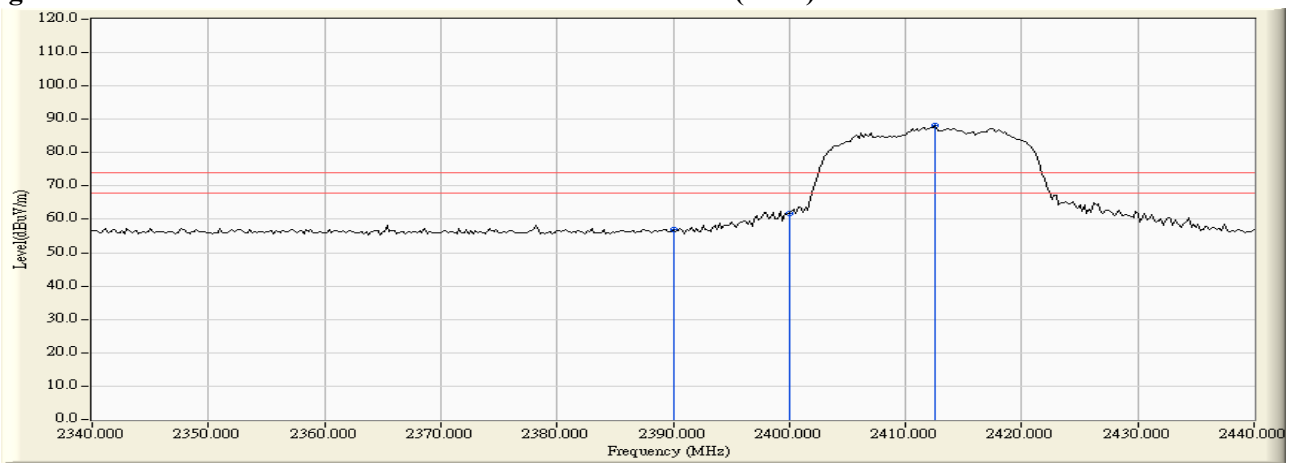
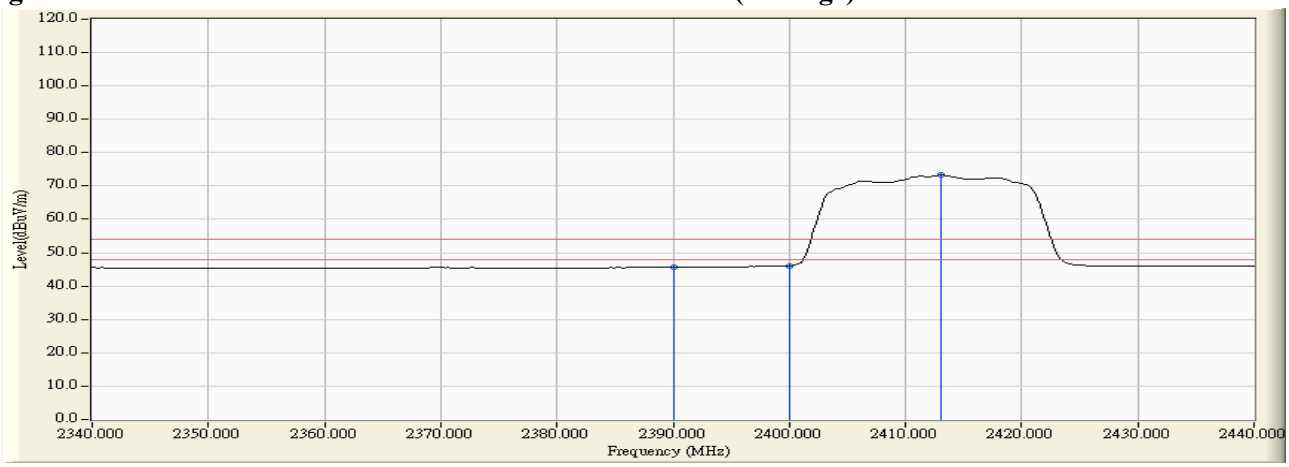


Figure Channel 01: Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2390.000	30.915	25.557	56.472	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	32.587	63.499	--	--	--
01 (Peak)	2412.800	30.955	60.239	91.194	--	--	--
01 (Average)	2390.000	30.915	14.164	45.079	74.00	54.00	Pass
01 (Average)	2400.000	30.912	14.827	45.739	--	--	--
01 (Average)	2413.200	30.957	44.506	75.463	--	--	--

Figure Channel 01: VERTICAL (Peak)

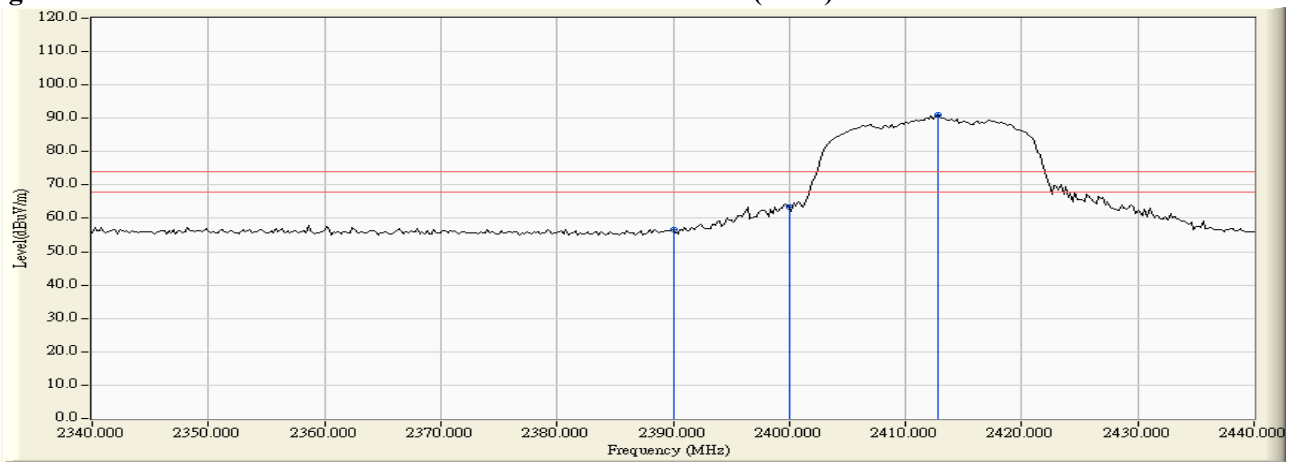
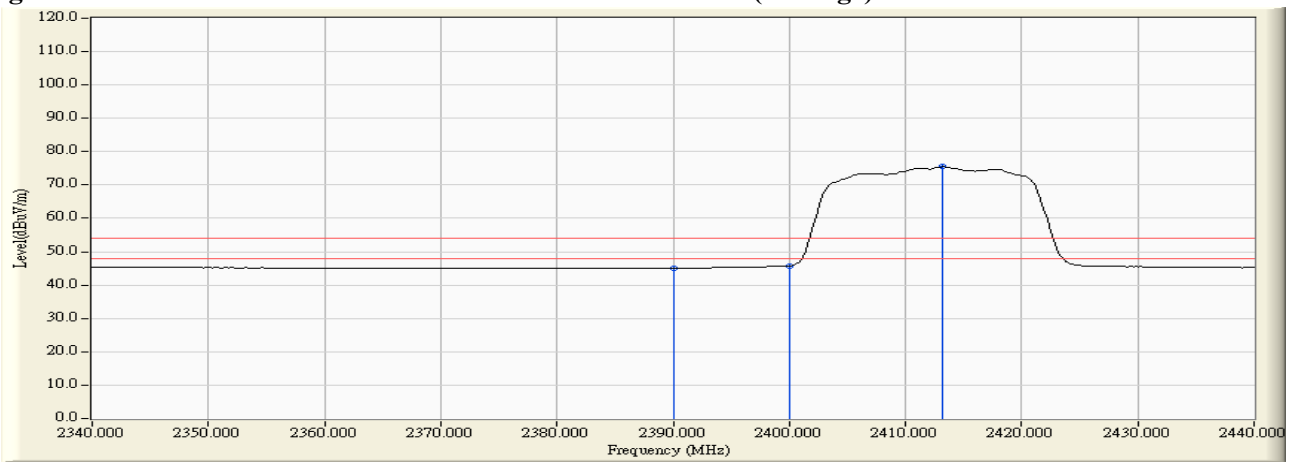


Figure Channel 01: VERTICAL (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2462.500	32.023	55.873	87.896	--	--	--
11 (Peak)	2483.500	32.182	24.062	56.244	74.00	54.00	Pass
11 (Peak)	2483.700	32.183	26.638	58.822	74.00	54.00	Pass
11 (Average)	2461.100	32.013	41.676	73.689	--	--	--
11 (Average)	2483.500	32.182	14.359	46.541	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

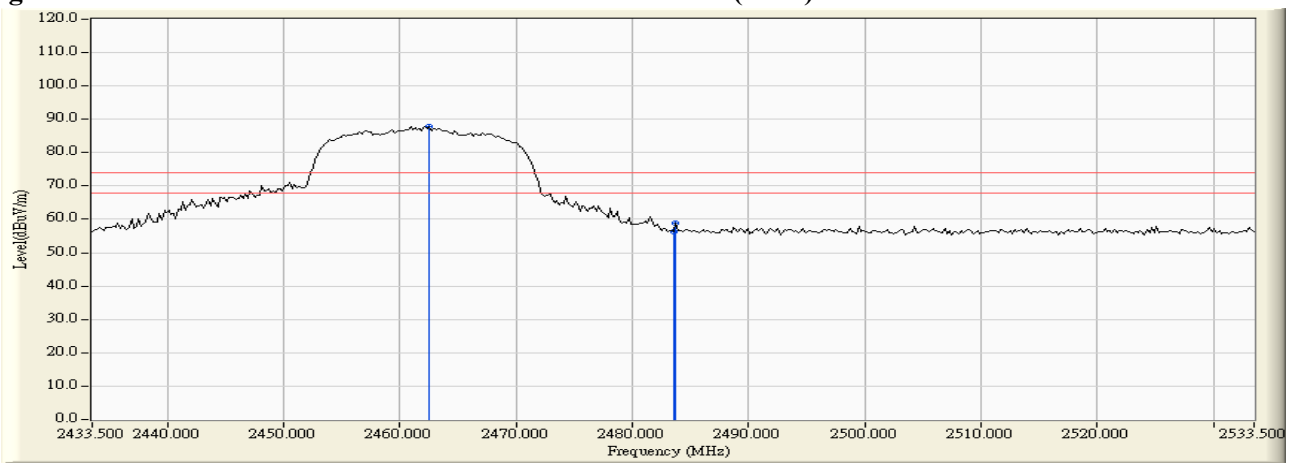
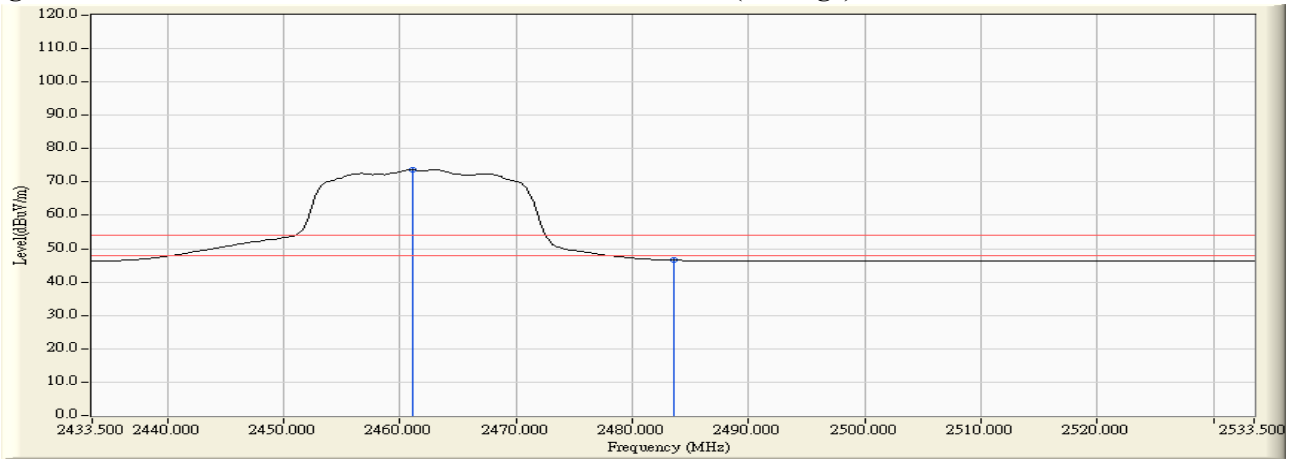


Figure Channel 11: Horizontal (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Digital Camera
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

RF Radiated Measurement (VERTICAL):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2461.500	31.287	60.239	91.526	--	--	--
11 (Peak)	2483.500	31.435	27.218	58.653	74.00	54.00	Pass
11 (Average)	2461.100	31.285	45.627	76.911	--	--	--
11 (Average)	2483.500	31.435	14.840	46.275	74.00	54.00	Pass

Figure Channel 11: VERTICAL (Peak)

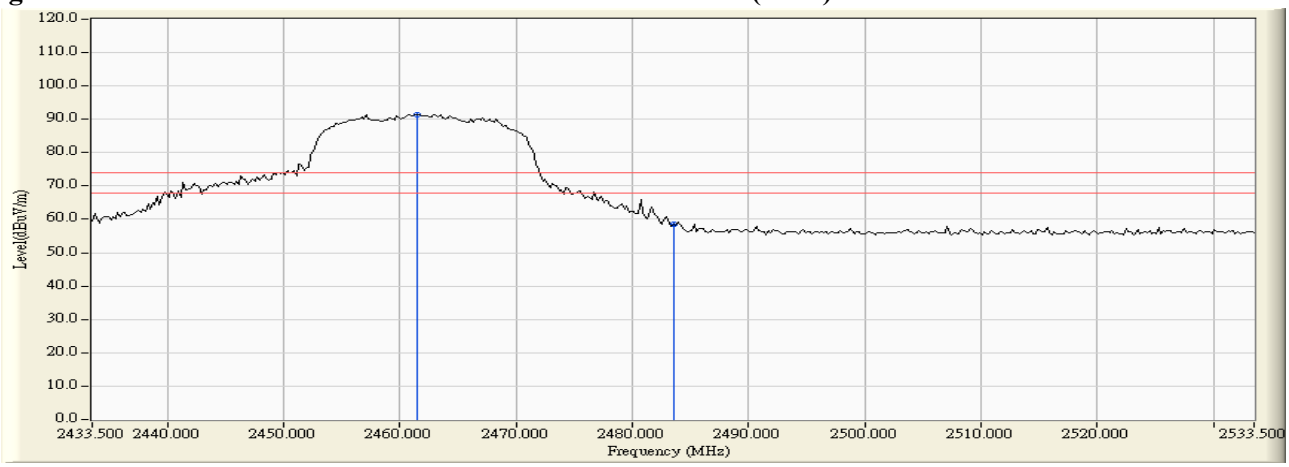
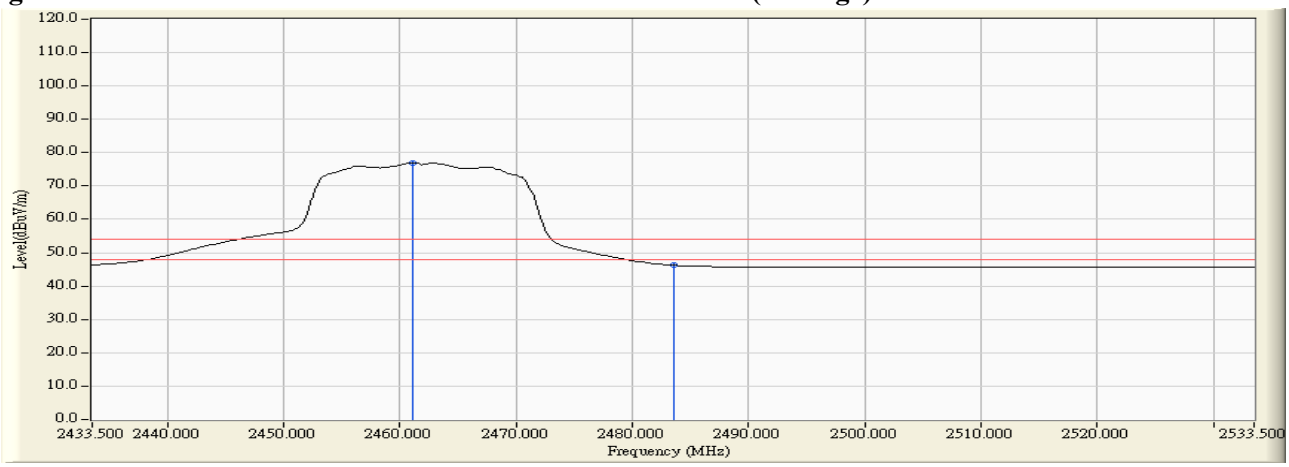


Figure Channel 11: VERTICAL (Average)



Note:1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. Occupied Bandwidth

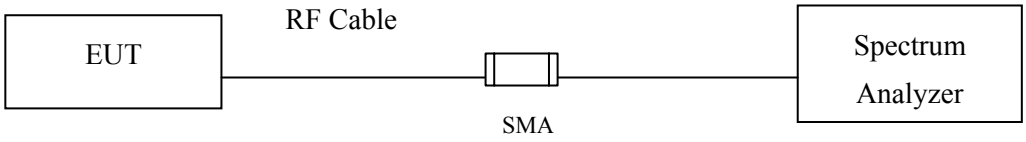
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009; tested according to DTS test procedure of Jan KDB558074 for compliance to FCC 47CFR 15.247 requirements.

7.5. Uncertainty

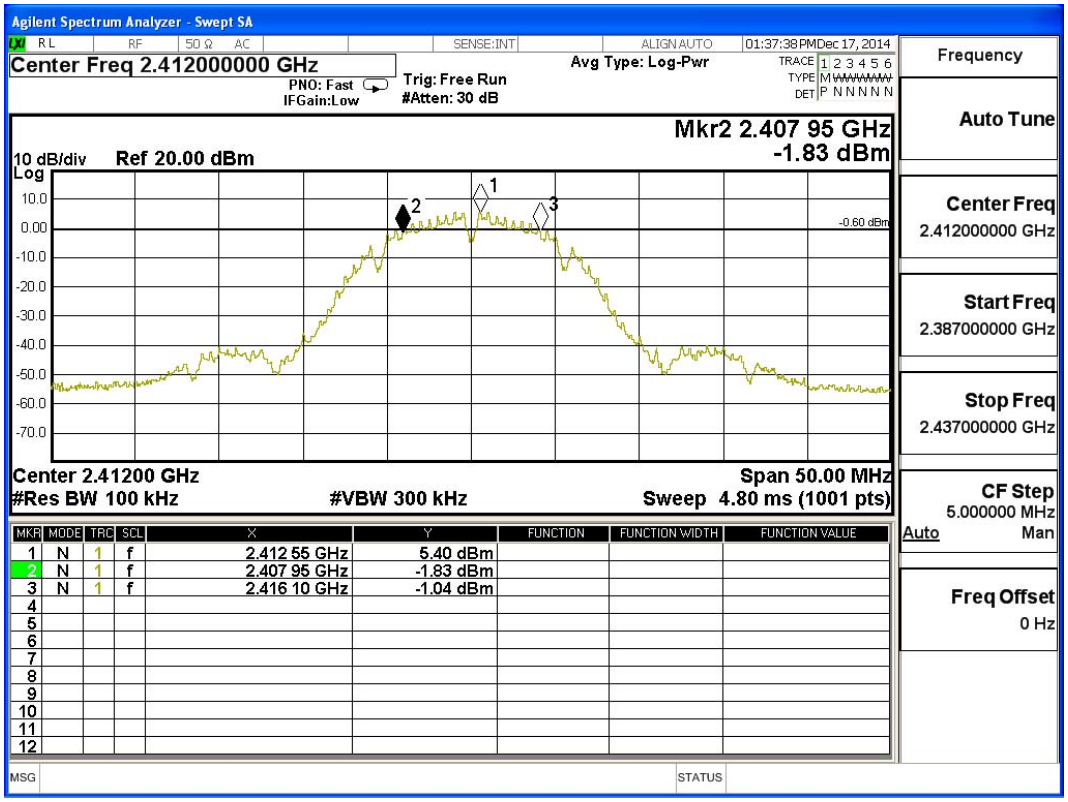
± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : Digital Camera
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	8150	>500	Pass

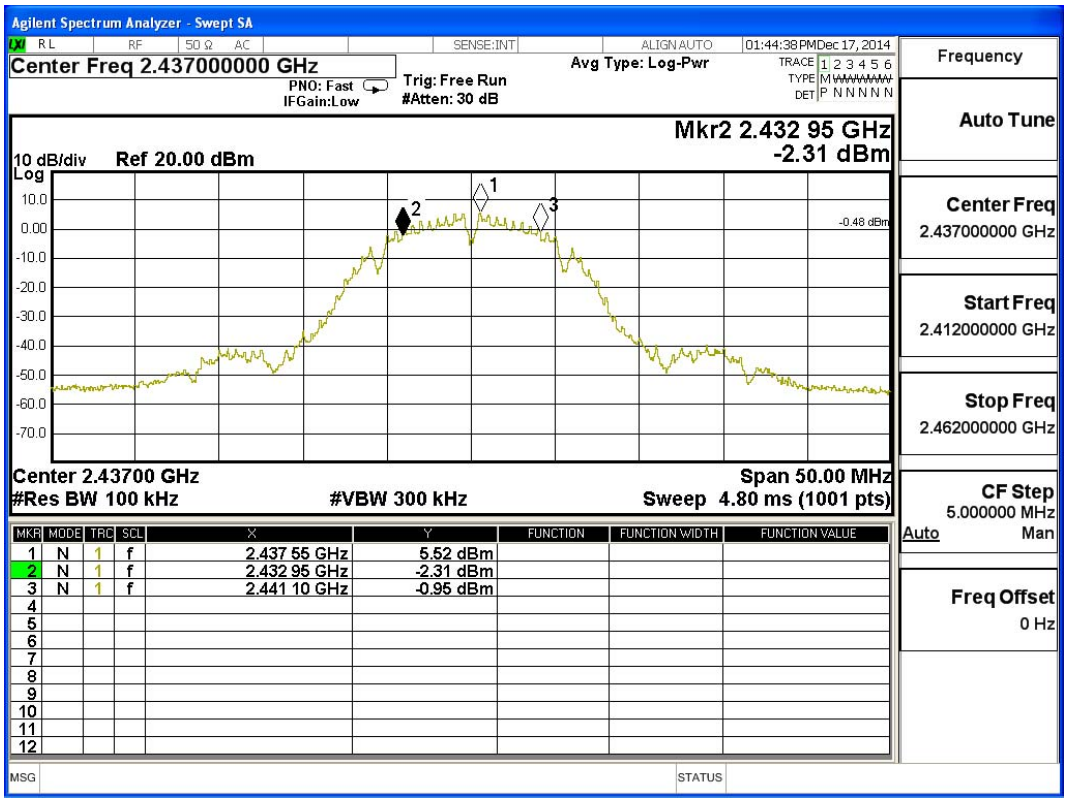
Figure Channel 1:



Product : Digital Camera
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	8150	>500	Pass

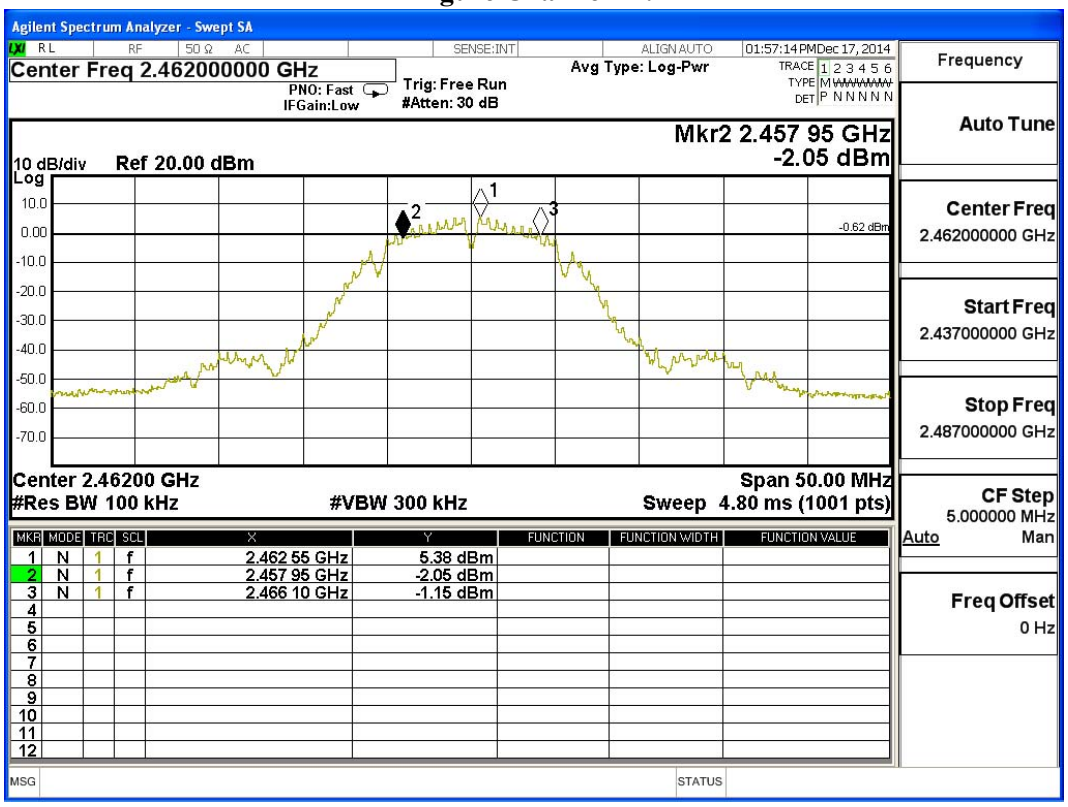
Figure Channel 6:



Product : Digital Camera
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	8150	>500	Pass

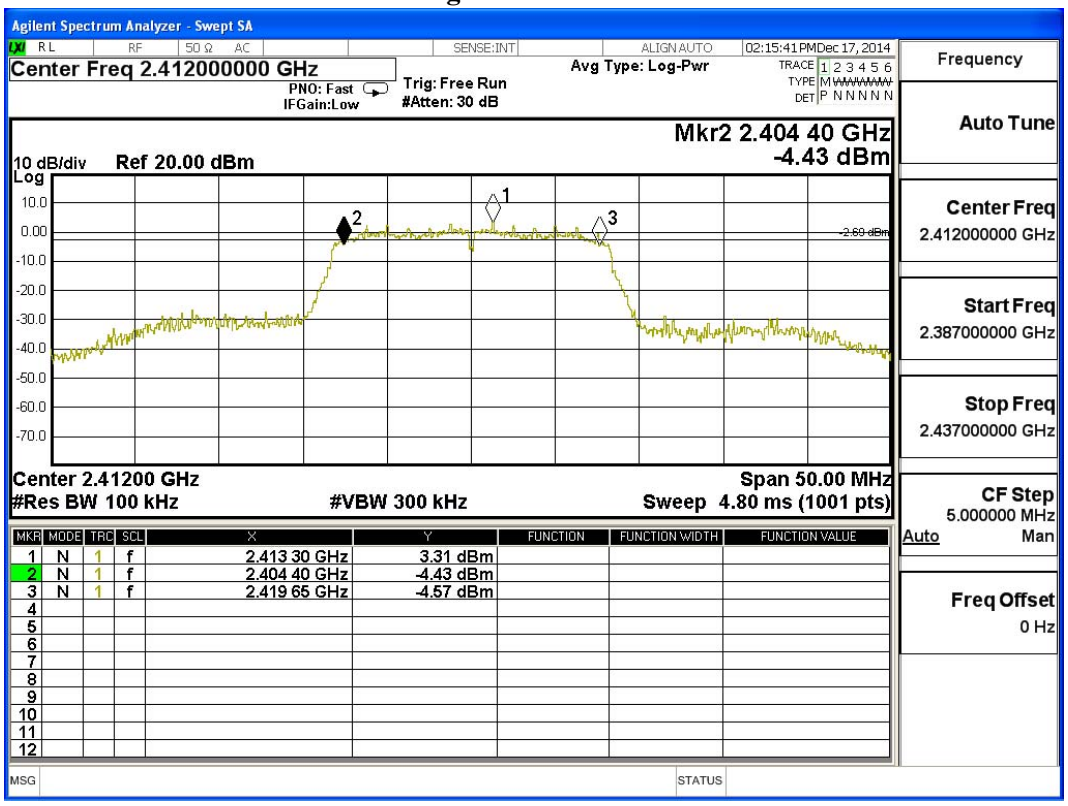
Figure Channel 11:



Product : Digital Camera
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	15250	>500	Pass

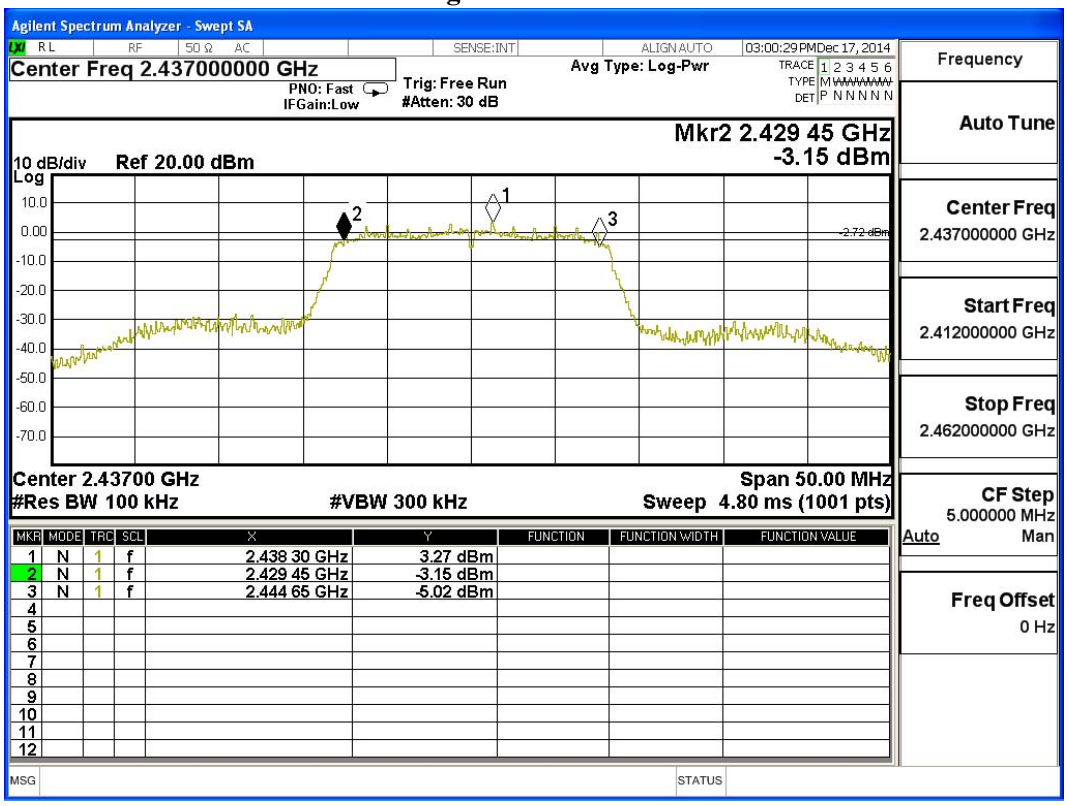
Figure Channel 1:



Product : Digital Camera
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	15200	>500	Pass

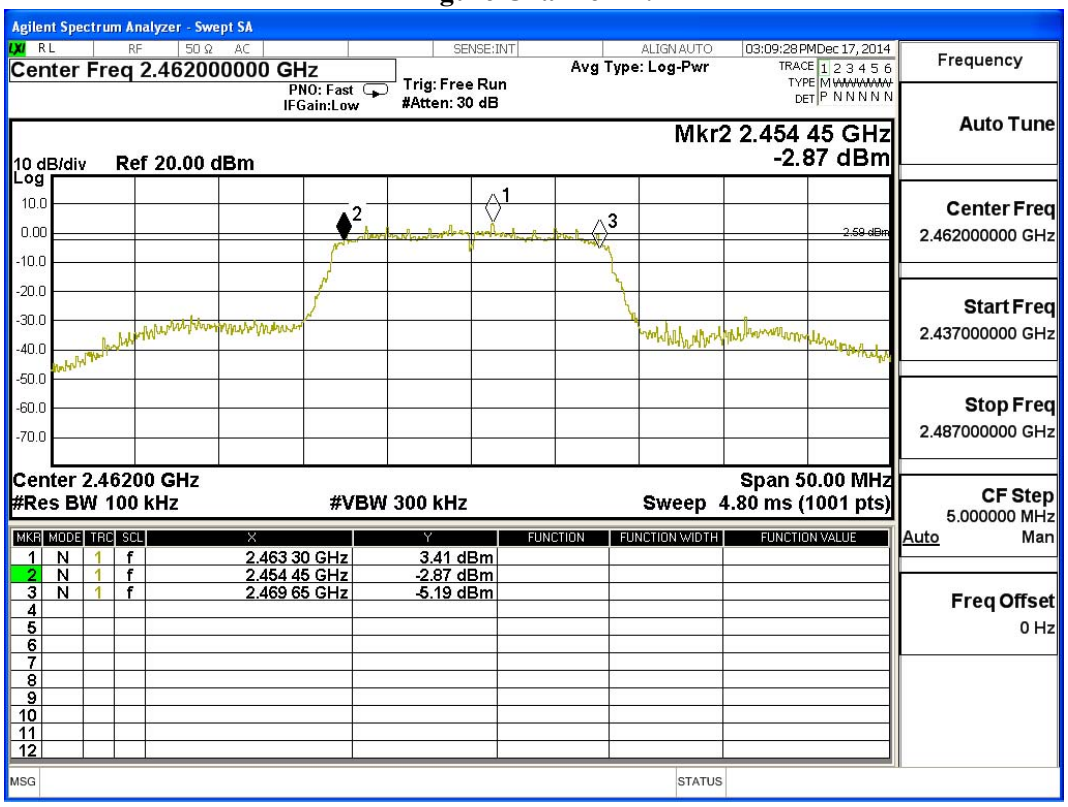
Figure Channel 6:



Product : Digital Camera
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	15200	>500	Pass

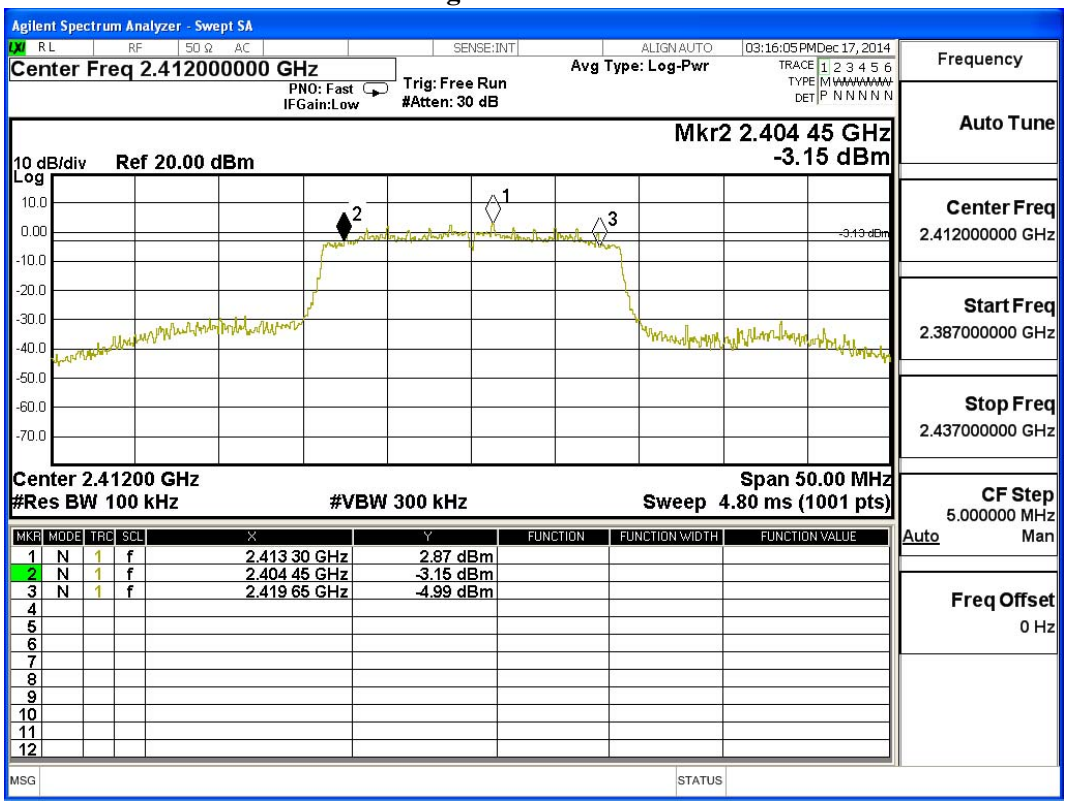
Figure Channel 11:



Product : Digital Camera
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	15200	>500	Pass

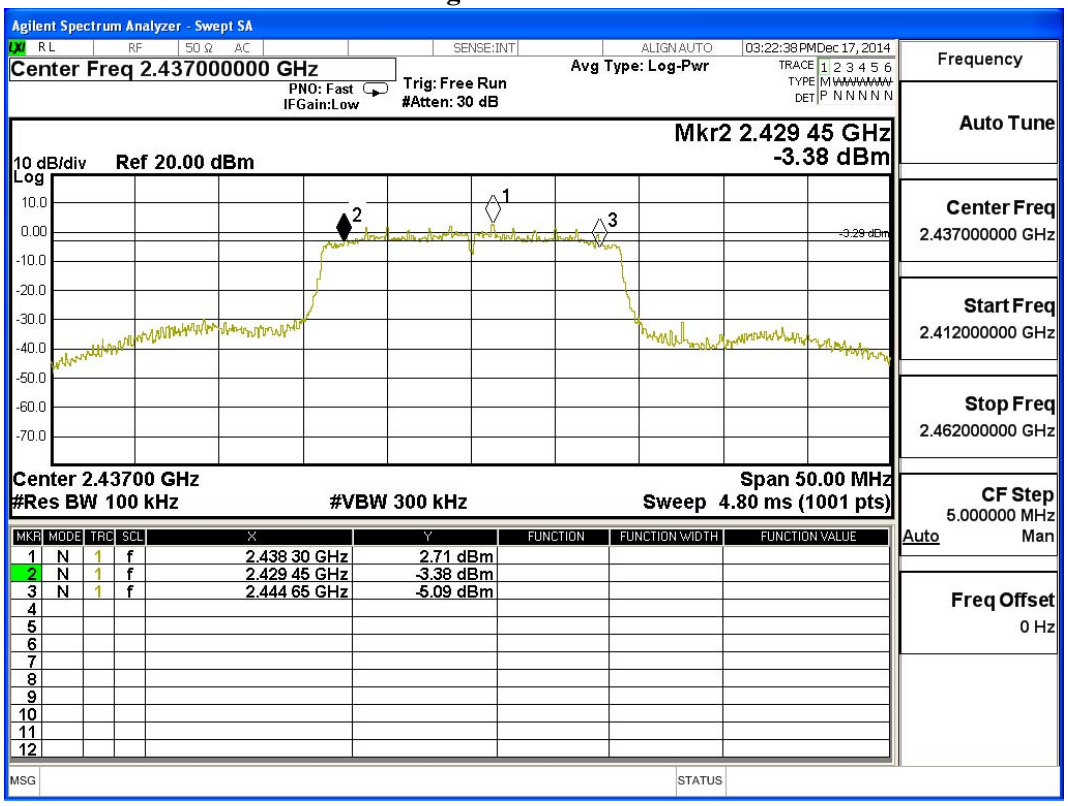
Figure Channel 1:



Product : Digital Camera
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	15200	>500	Pass

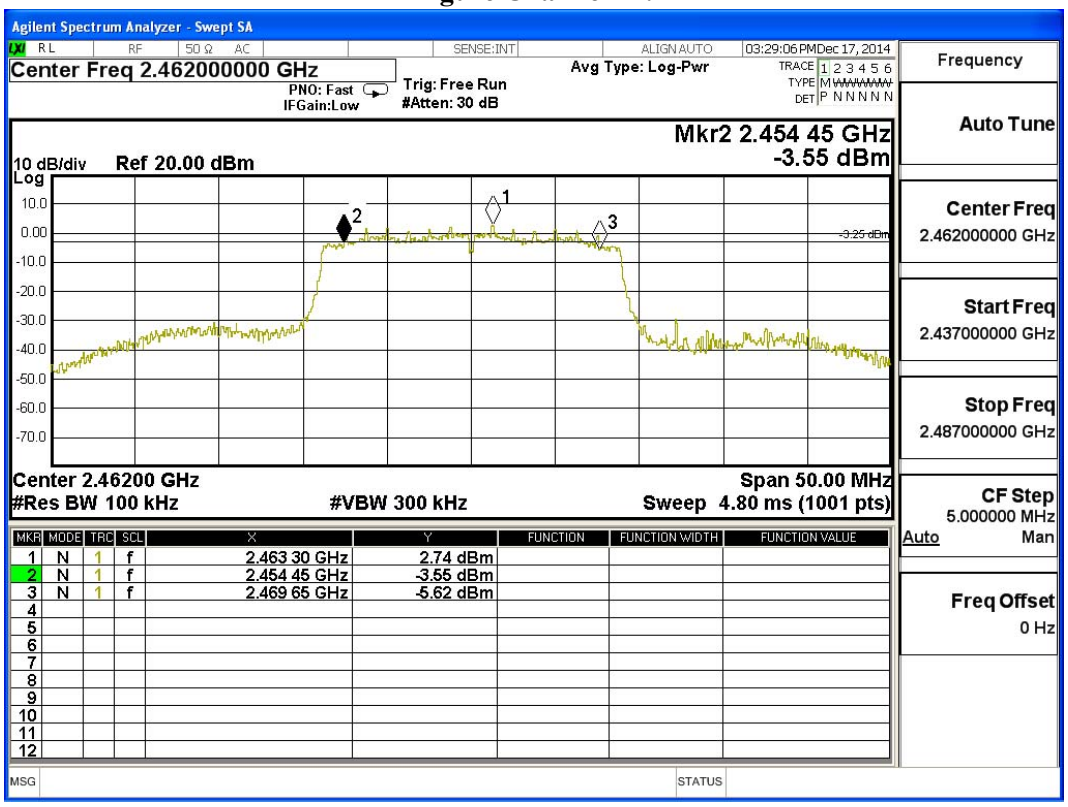
Figure Channel 6:



Product : Digital Camera
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	15200	>500	Pass

Figure Channel 11:



8. Power Density

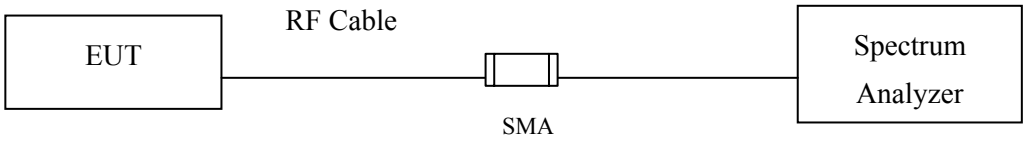
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
The maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

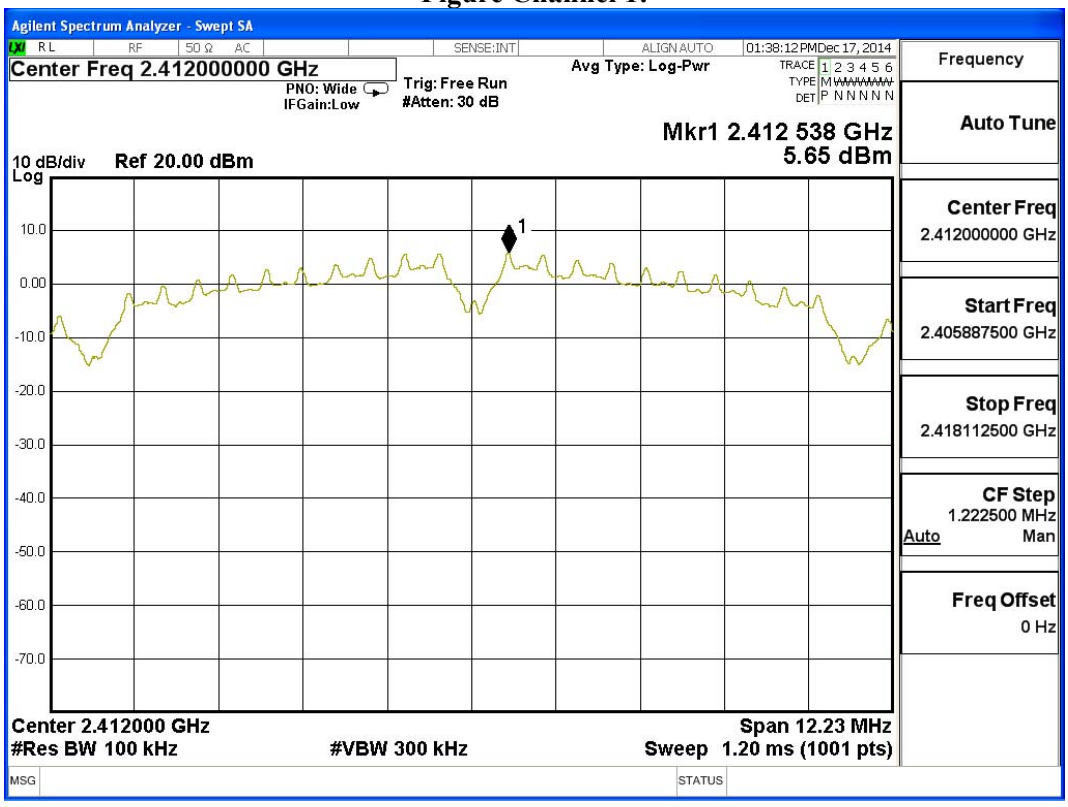
± 1.27 dB

8.6. Test Result of Power Density

Product : Digital Camera
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	5.650	< 8dBm	Pass

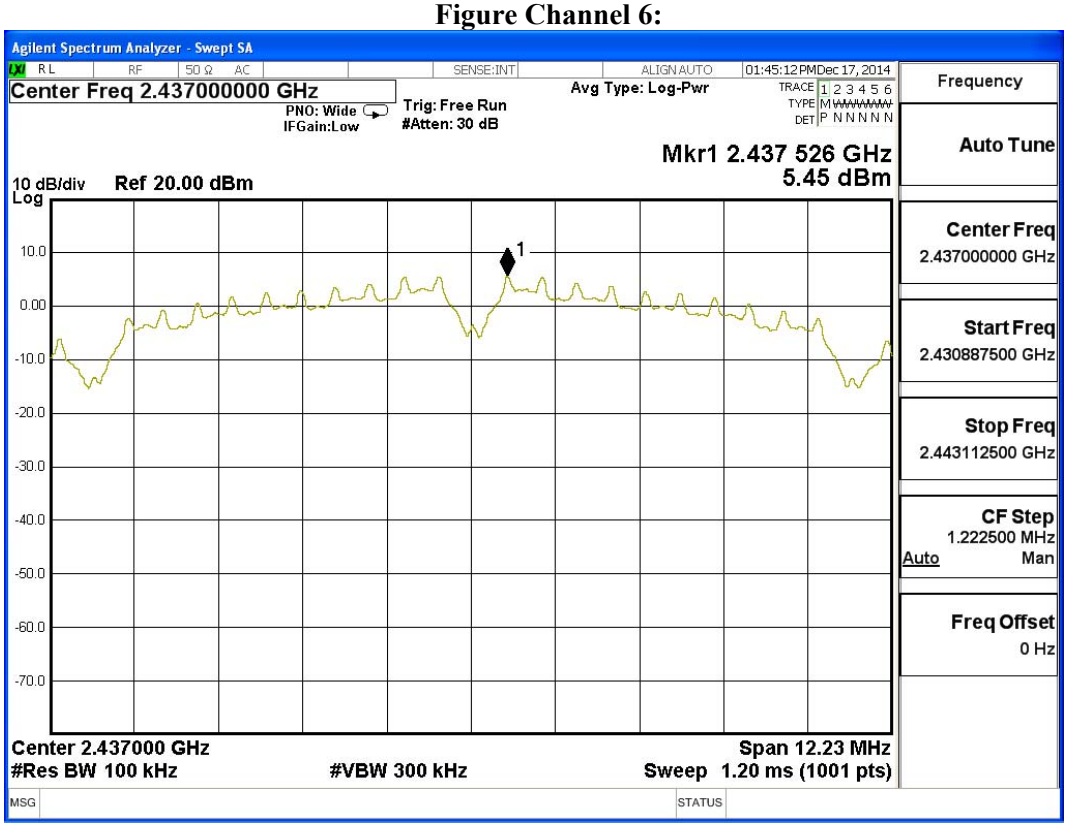
Figure Channel 1:



Product : Digital Camera
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	5.450	< 8dBm	Pass

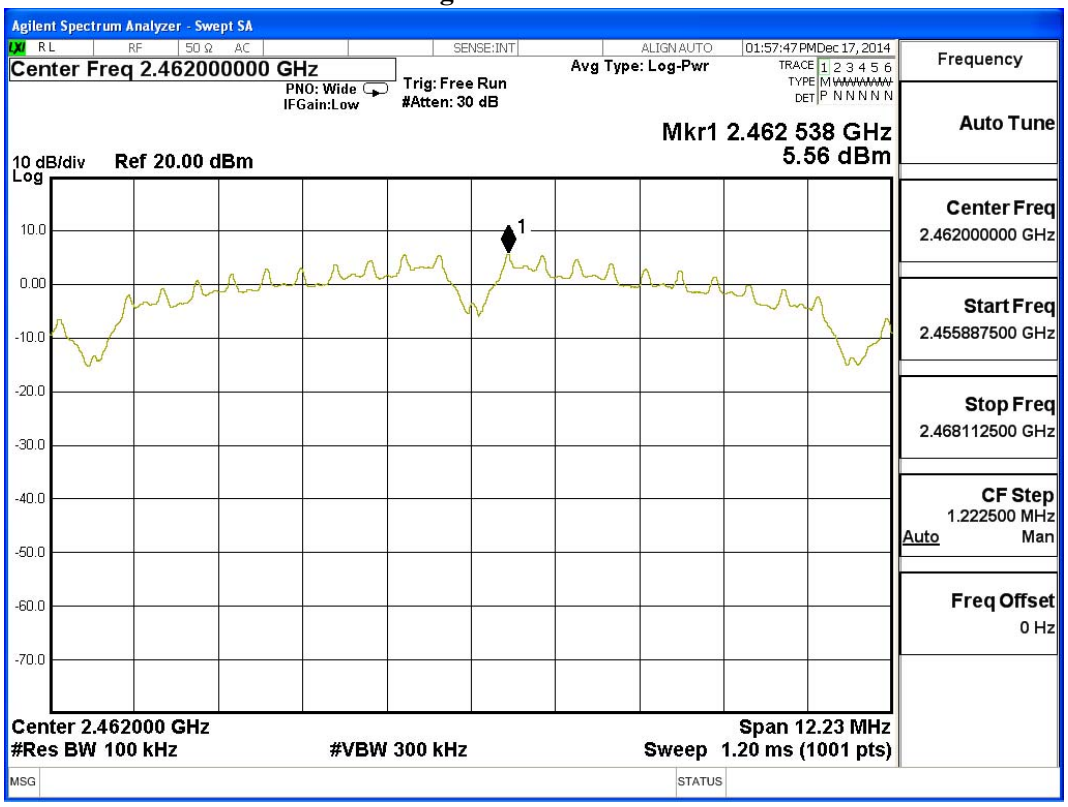
Figure Channel 6:



Product : Digital Camera
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	5.560	< 8dBm	Pass

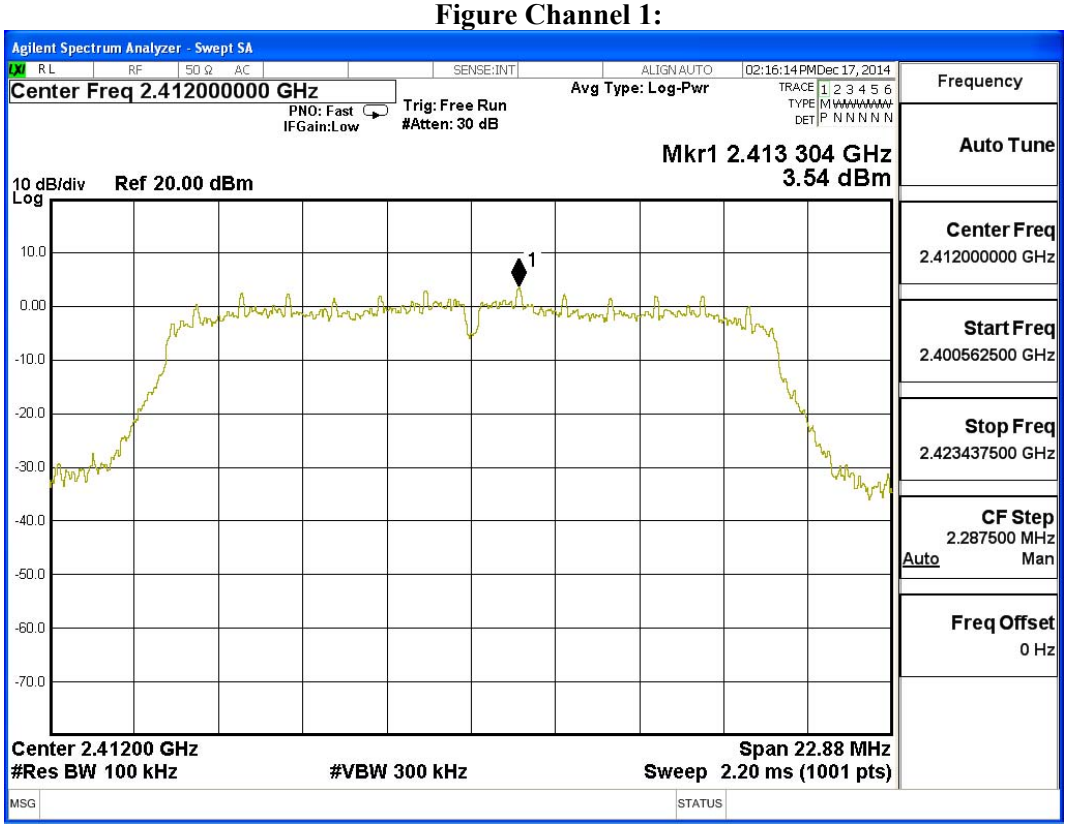
Figure Channel 11:



Product : Digital Camera
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	3.540	< 8dBm	Pass

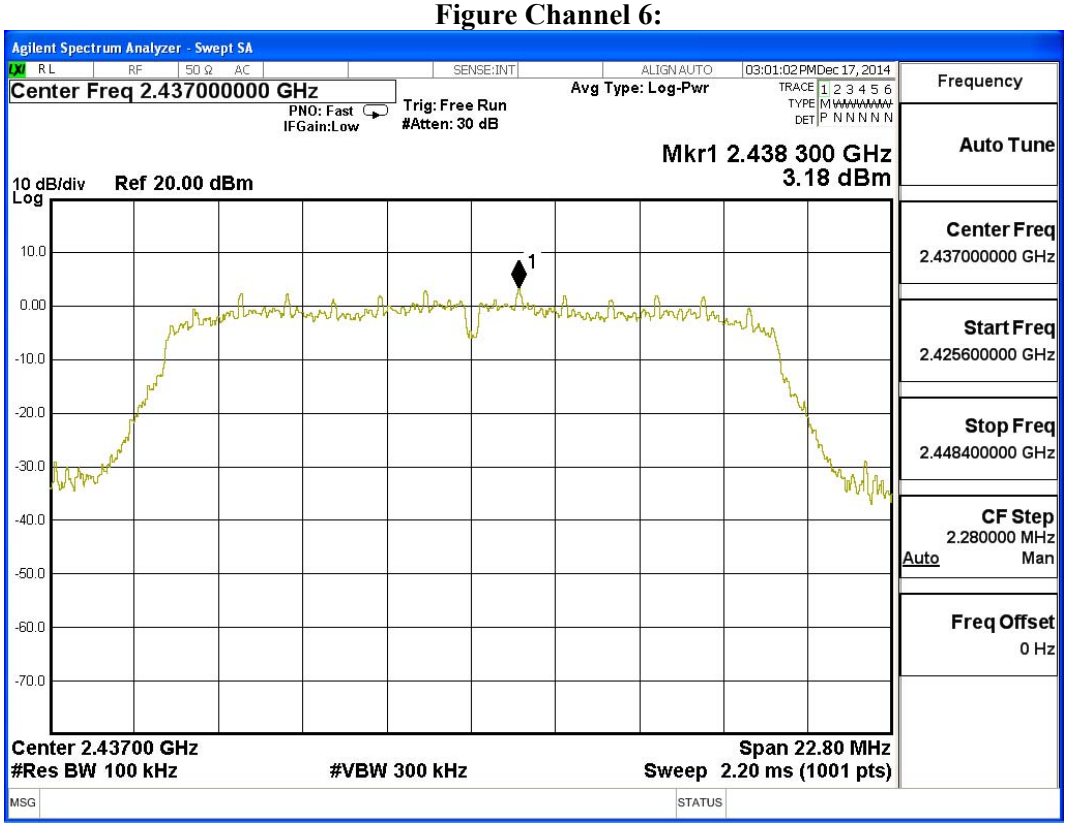
Figure Channel 1:



Product : Digital Camera
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	3.180	< 8dBm	Pass

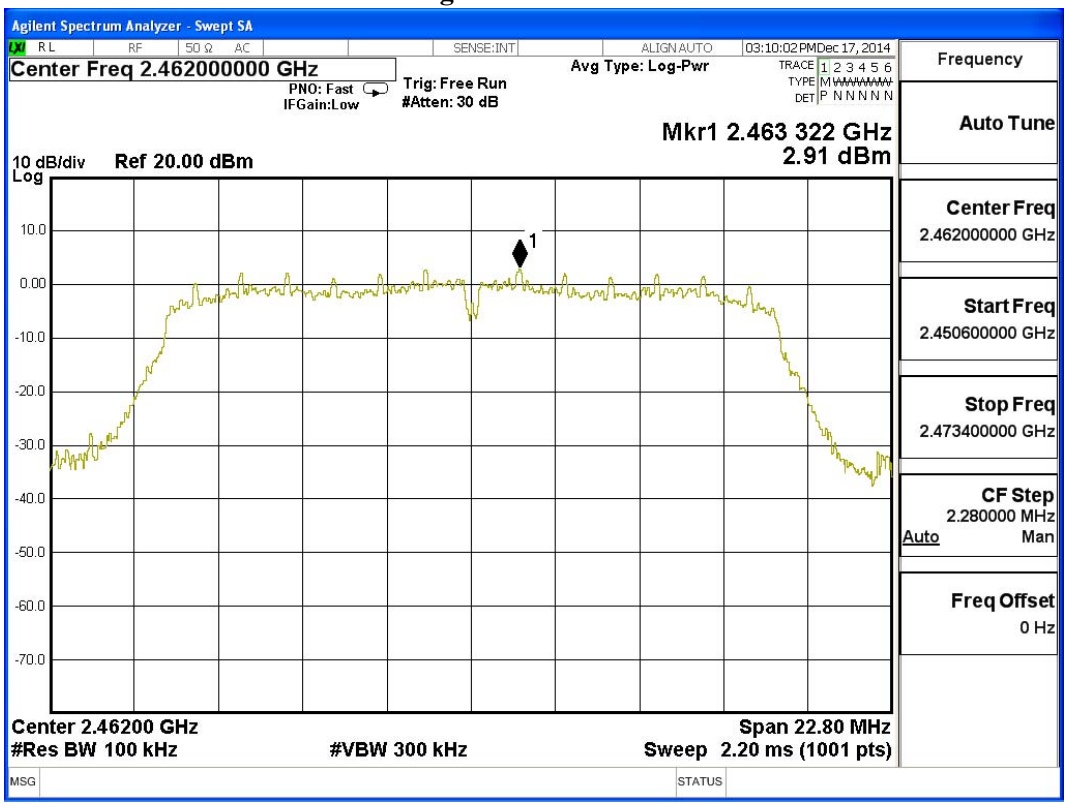
Figure Channel 6:



Product : Digital Camera
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	2.910	< 8dBm	Pass

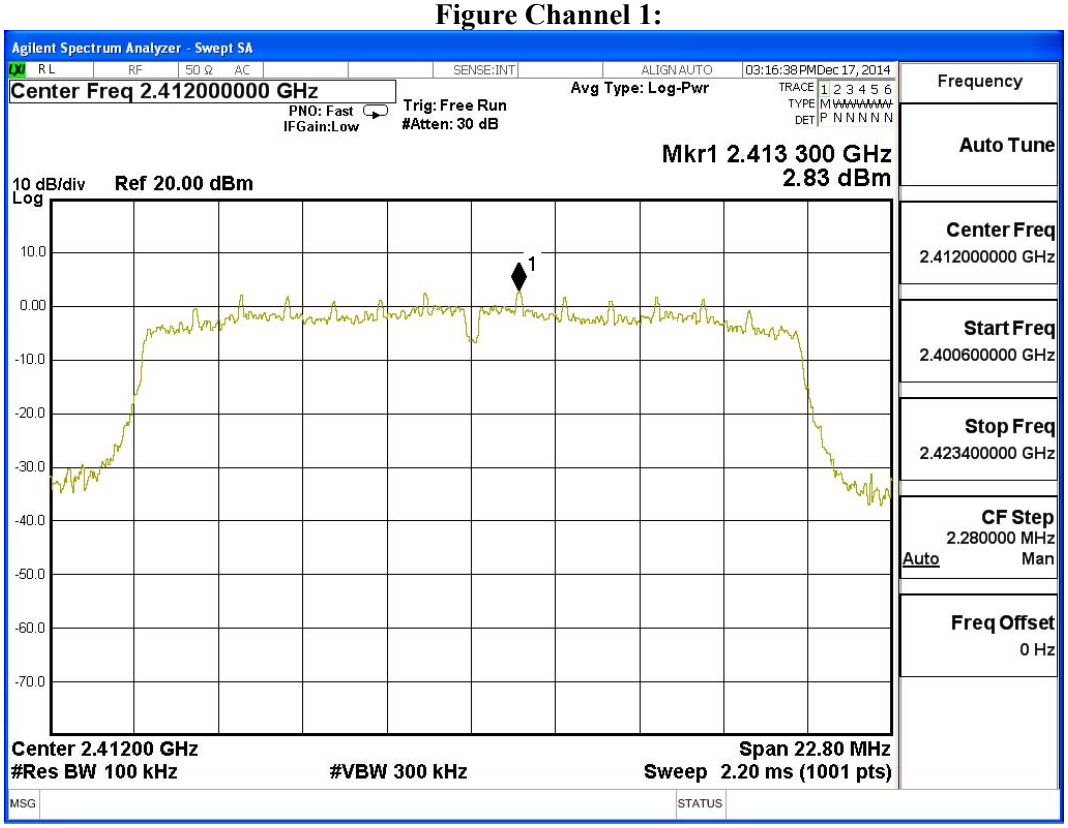
Figure Channel 11:



Product : Digital Camera
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	2.830	< 8dBm	Pass

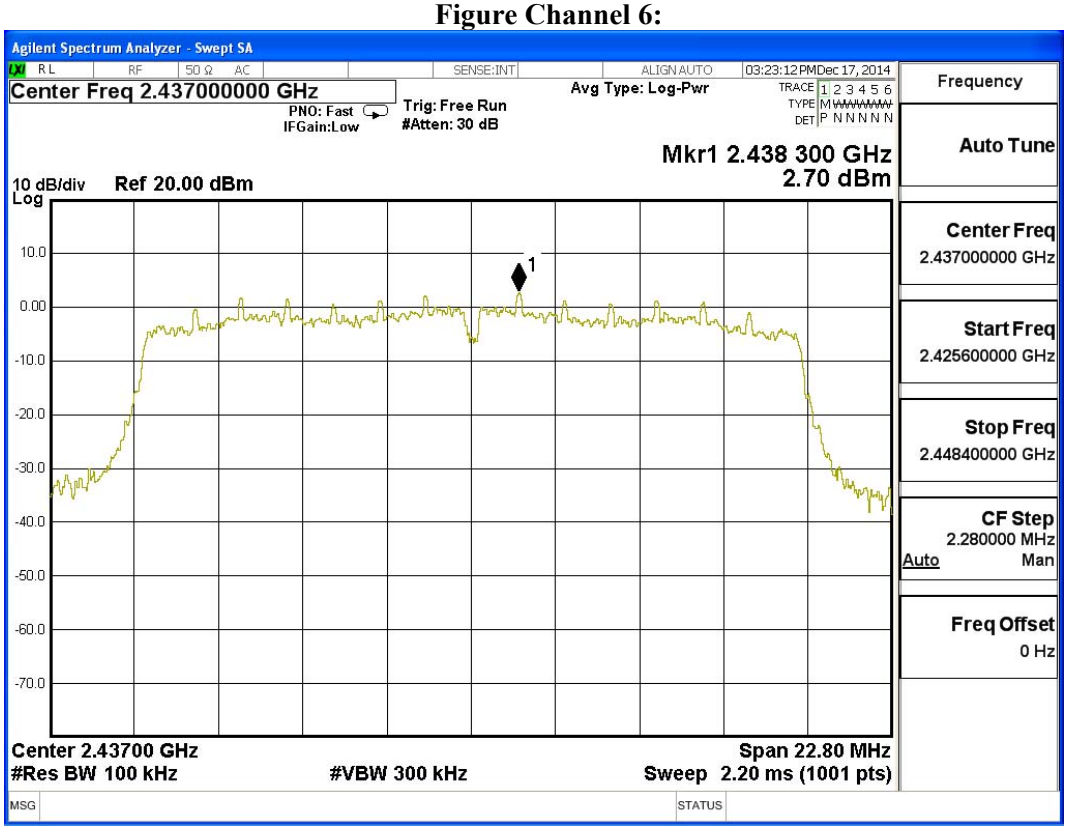
Figure Channel 1:



Product : Digital Camera
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	2.700	< 8dBm	Pass

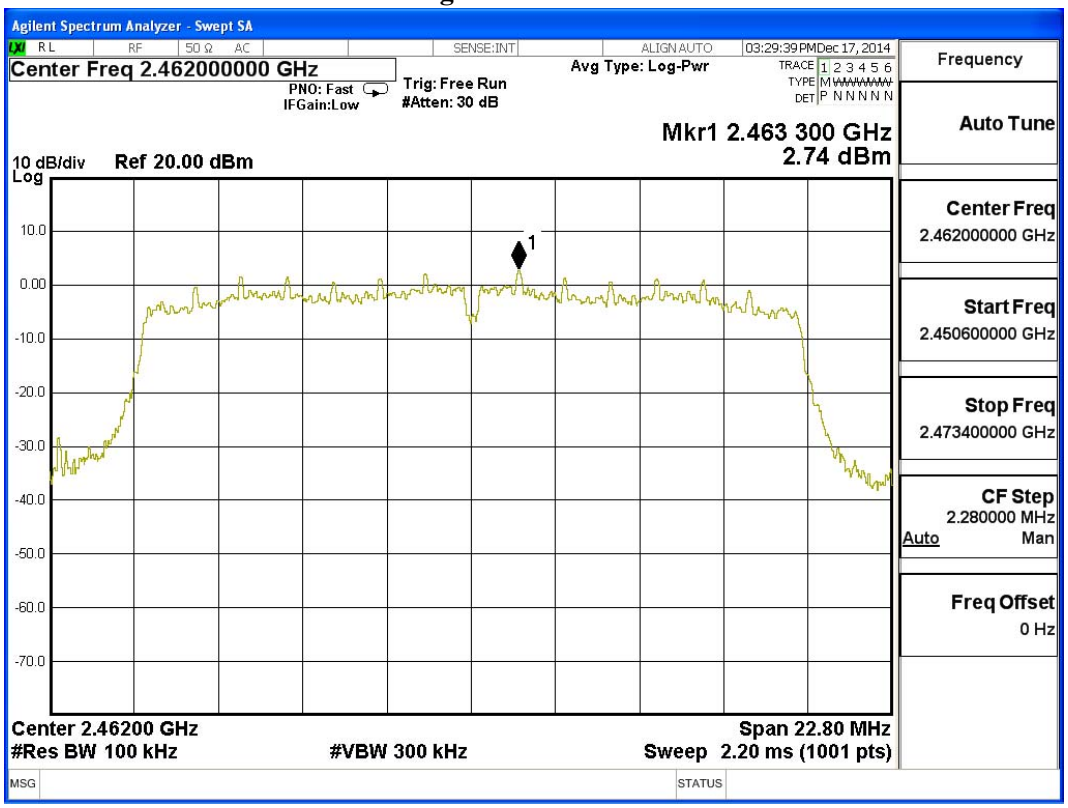
Figure Channel 6:



Product : Digital Camera
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	2.740	< 8dBm	Pass

Figure Channel 11:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs